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THE SPECIALIST AND THE GENERAL PRACTITIONER

IN RELATION TO TEAM-WORK IN MEDICAL PRACTICE *

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BALTIMORE

A striking feature of contemporary medicine is the effort everywhere becoming manifest to correlate the activities of physicians, surgeons, and medical and surgical specialists for the purpose of securing comprehensive diagnostic surveys and more efficient treatment of single patients. As a result of this effort, so-called group practice in a variety of forms is emerging. New modes of association of clinical men have been suggested and new methods for the conjoint communication of experience have been devised, which are believed by many to be full of promise both for public welfare and for medical advance. If this new institution of group practice, which is based on new forms of cooperation and coordination, is to evolve in the best way, those who encourage it must give careful thought to the principles that should underlie it, to the advantages that may be derivable from it, and to the dangers that may beset it. It has occurred to me that, in this connection, some discussion of medical specialization in its relation to team-work in practice might be both timely and profitable; for to the growth of the medical specialties more than to any other factor must, in my opinion, be attributed the origin of the feeling that practice by means of team-work is an urgent need.

MEDICAL MEN AS PRODUCERS OF SERVICES

Viewed from the standpoint of economics, medical practitioners are a part of the great want-gratifying mechanism of society, for they produce desired nonmaterial "goods" that are called "medical services." Through the ages, society has seen fit especially to reward certain of its groups that produce only nonmaterial services; physicians, teachers, lawyers and amusers are examples of such groups. The production and distribution of nonmaterial goods (or services) are fully as important for social welfare as are the production and distribution of material goods (or wealth).

Medical services directly gratify certain human wants; for human beings want health. When they have lost it, they want to know the reason why (diagnosis); they want to have it restored (therapy); and some persons are far-sighted enough to employ physicians to help them to retain health when they have it, to guide their conduct so as to prevent the development of disease (prophylaxis). The people encourage, therefore, the practice of medicine and reward its practitioners in various ways in the hope that their own wants as regards diagnosis, therapy and disease prevention will be satisfied by means of the medical services rendered.

THE EVER-INCREASING VARIETY AND COMPLEXITY OF MEDICAL SERVICES

In a society that is progressing, human wants are constantly changing; and the desires of a people for medical services form no exception to this general rule. As professional knowledge and skill grow, laymen gradually become aware of new possibilities of diagnosis, of treatment and of prevention. People have, accordingly, come to demand, today, a variety and complexity of medical and surgical services entirely unknown to, and largely unforeseen by, their forerunners. To fulfil these demands, work in medicine has had to be divided into a series of special tasks.

A glance at Chart 1, which contains a list that is by no means complete, will give some idea of the extent to which the field of medical practice has already undergone subdivision.

This subdivision of the field of medical practice has, as every one knows, necessitated a functional differentiation among the clinical workers. In the future, certain parts of the field will, doubtless, be still further divided, and, along with this cleavage, there will be a still further concentration of interests and restriction of activities of special workers. And as specialization becomes ever more pronounced, new knowledge will be acquired and new technical methods will be developed. These will, in turn, create among the people new wants, as well as the means for their gratification.

THE EVOLUTION OF MEDICAL SPECIALISM

Medical specialism could not extensively and fruitfully develop before the advent of modern scientific medicine. Primitive medicine (folklore medicine) needed no specialization, for it knew nothing of diagnosis, and therapy consisted of driving out demons or of applying "white magic" to counteract the effects of "black magic." Certain gross symptomatic pictures of disease were, it is true, recognized relatively early, and, at times, there was a special physician for the treatment of each one of these diseases. But such pseudospecialism stood in no connection with the specialism by experts that we now know. As empiric medicine gradually developed, a certain division of labor among practitioners became manifest. Thus, surgeons, midwives and specialists on eye diseases

* Read before the Yorkville Medical Society of the City of New York, Dec. 19, 1921.

early emerged. In Galen's time (second century A. D.), in addition to the general practitioner, there were already many men who devoted themselves to special branches. Thus, besides eye doctors, ear doctors and tooth doctors, there were general surgeons, surgeons who specialized in the treatment of single disorders such as fistula, hernia and stone, and physicians who made preferential use of single therapeutic procedures, such as hydrotherapy. It was not, however, until long after the revival of learning that medicine made sufficient progress to permit of any markedly advantageous specialism. Even the seventeenth century, with its individual scientific endeavor, and the eighteenth century, with its theories and systems, did not advance knowledge and technic to a degree compatible with a high grade of specialization. Really fruitful specialization in clinical work could not appear until after the natural sciences (biology, physics, chemistry) had undergone that great development that the nineteenth century witnessed. It was the organization of modern science and the application of the experimental method to the development of technic that made modern medical specialism possible.

CHART 1.—DIVISION OF CLINICAL MEDICINE INTO SPECIAL BRANCHES

General Practice

Internal Medicine — Surgery

Medical and Surgical Specialties

1. Obstetrics
2. Pediatrics
3. Psychiatry
4. Neurology
5. Ophthalmology
6. Otology
7. Laryngology and Rhinology
8. Orthopedics
9. Gynecology
10. Urology
11. Dermatology
12. Dentistry
13. Gastro-enterology
14. Cardiology
15. Hematology
16. Parasitology and Immunology
17. Metabolism
18. Endocrinology
19. Specialties for the employment of a particular technical method (roentgenology, clinical pathology, anesthesia, etc.)
20. Specialties for the study and treatment of single diseases (e. g. tuberculosis, diabetes, epilepsy)

Hospitals for special classes of cases were founded relatively early in the nineteenth century, and specialization in clinical instruction appeared even earlier. Thus, in London, the Royal Ophthalmic Hospital was established in 1804, the Royal Hospital for Diseases of the Chest in 1814, and the Royal Ear Hospital in 1816. In 1825, a fever hospital was established in New York City. In 1832, the Lying-in-Hospital of Boston was founded, and in 1838 a Royal Orthopedic Hospital in England. Since then, an enormous number of hospitals for special groups of diseases, or for single diseases, have been built. It should not be forgotten that the foundation of such special hospitals lagged, however, almost a century behind the reform of clinical instruction by the universities of Edinburgh and Vienna. In these universities many of the special subjects were represented by clinical professors who taught them to the exclusion of other branches.

Physical methods of examining patients were much improved during the nineteenth century. General medicine had received a great impetus through the introduction of percussion by Auenbrugger (1761) and of auscultation by Laënnec (1815). These two fundamental methods represent notable applications of the science of physics to medical practice. They began the era of careful physical examination of all patients by physicians. There soon followed a great series of other applications of physics and of applications of biology, chemistry, anatomy, physiology and pathology to both general and special practice, for the advances rapidly made in the natural sciences and in the preclinical medical sciences yielded vast stores of new knowledge and of new technical procedures that could be clinically applied.

Medical practitioners quickly recognized their new opportunities, and intensive work in the various special domains of medicine speedily led to an unprecedented promotion of these special branches. New instruments of clinical exploration were gradually devised as aids to diagnosis. The compound microscope with its oil immersion lens, the clinical thermometer, the stethoscope (1819), the Sims speculum (1849), the ophthalmoscope (1851), the laryngoscope (1855), the sphygmograph, the spectroscope (1859), the stomach tube (1867), the cystoscope (1879), the roentgen ray (1893), the bronchoscope (1898), the string galvanometer (1903), and the respiration calorimeter (1904) may be cited as examples. Such instruments require some skill to operate them; they are not automatic machines that can be used by unskilled persons, though as technic comes to be further developed, thought, skill and intelligence may be more and more transferable from persons to machines that require only an attendant to start and stop them. The way roentgenology has developed would give color to this view. Bacteriology, parasitology and immunology also developed, illuminated etiology, and gave us staining methods, cultural methods, agglutinin tests, complement fixation tests, tuberculin tests, and the Schick test, as well as a large series of vaccines and antitoxins. Biochemistry provided elaborate analytic methods, and made clinical studies of the chemistry of metabolism practicable. Ehrlich's application of the staining methods of histology to the study of the blood was the starting point of modern hematology. Gas anesthesia (1800), ether anesthesia (1842, 1846), chloroform anesthesia (1847), cocain anesthesia (1884), and infiltration anesthesia (1894) made it possible to perform operations without pain. Lister's antiseptic methods (1867) and, later, the introduction of aseptic methods, made feasible by steam sterilization (1886) and by the application of bacteriologic technic, abolished most of the dangers of infection of surgical wounds. The manufacturers of surgical instruments, trained nurses, organized operating rooms and operating staffs, and experimental researches in animal surgery enabled surgeons to become ever more daring in exploring the interior of the body, and modern surgery sprang upward under our eyes like the magic tree of the Hindus. Medicine, surgery and the specialties thrived as never before.

So great has been the growth of theory and methods in medicine that the medical schools can no longer attempt to teach all to the students. All that can be done in the undergraduate years is to teach the main facts and principles and the more important practical technical methods of the preclinical medical sciences

and of general medicine, general surgery and obstetrics; only a bird's-eye view of the subject matter and practical procedure of the special clinical branches can be given in the undergraduate medical school. The foundations for medical specialism the student gets, it is true, in this school, but the superstructure must be erected after his graduation. At least two or more years of postgraduate work are requisite for the acquisition of additional knowledge and of special skill in any medical or surgical specialty before the aspirant dare consider himself proficient. Intensive study of the anatomy, physiology, pathology and etiology in a special field, together with unremitting practice of the technical methods applicable to that field, are necessary for the preparation of the true specialist.

Pseudospecialism and inefficient specialism are all too prevalent and do much to discredit legitimate specialism. Despite this drawback, however, the genuine expert is finding his place. The public demands him and the profession needs him in addition to, and as an aid to, the indispensable general practitioner. The medical profession and the laity are both learning to frown upon the false and the insufficiently trained specialist.

Modern specialism in medicine is, then, the result of a long evolution, from the time of folklore medicine to that of modern science. The steps toward it were at first slowly and falteringly made. Since 1850, gigantic strides have characterized its progress.

HOW DIAGNOSIS AND THERAPY BENEFIT BY SPECIALIZATION

Medical and surgical specialties are capable of contributing significantly to the performance of the great task of satisfying the wants of the public for diagnostic and therapeutic services. They can do this in several different ways, and to some of these we may now conveniently turn.

1. *Specialization Increases Productivity.*—Specialization in medicine, as in other domains, is an effective means by which the results of a given amount of work can be increased. By subdivision of tasks, operations that are easier in themselves result; by repetition of tasks, operations come to be performed with greater ease.[1] The profession of medicine as a whole is complex; its subdivisions represent simpler units that in turn are further subdivisible into certain processes that can be finally resolved into still simpler constituent operations. Specialization is the most fruitful device for the increase of the productivity of workers and for the improvement of skill and judgment among workers that society has found it possible to contrive. This device can be made to be almost as valuable for medicine and surgery as it has proved to be for commerce and industry.[2]

2. *Specialization Facilitates the Acquisition of Accuracy, Speed and Skill.*—Modern medical and surgical technic is full of difficult and delicate tasks, and diagnostic and therapeutic methods require long practice in their application before accuracy and speed can be attained. The mere learning of how to apply a method will not suffice. The method must be applied often enough to become a habit. Even after becoming expert in applying a method, one must keep constantly at work at it if he is to continue to be expert. The beginner in ophthalmoscopy, in laryngoscopy or in cystoscopy works slowly, clumsily and with effort; only gradually do hand, eye and brain become better coordinated, until, finally, as William James puts it, the performance is handed over "to the effortless custody of automatism." How many general practitioners are prepared to make accurately, quickly, skilfully and without strain a neurologic examination, a psychiatric examination, an orthopedic examination, or an examination of the urinary tract from urethra to kidneys? How many of them are masters of the technic of the Wassermann reaction, of blood culture methods, of blood sugar determinations, of basal metabolism measurements, of roentgenoscopy or of electrocardiography? How many of them are really expert in hydrotherapy, in radiotherapy or in psychotherapy? The general practitioner is, it is true, as necessary as ever; he plays a most important and indispensable rôle. But what loss would the medical profession and the public not suffer if all medical practitioners were to strive for equal skill in the application of all the various diagnostic and therapeutic procedures. If we are to supply the public with the medical and surgical services that modern science has made available, we must, in addition to the work of the general practitioner, have the cooperation of experts in more limited fields, men who have gradually built up through restricted practice the specialized experience that permits of achievements impossible without it. Thus, and thus only, can the difficult and delicate tasks of present day diagnosis and therapy be satisfactorily performed.

3. *Specialization Provides for a Better Distribution of Tasks.*—A further advantage for diagnosis and therapy derivable from specialization is the opportunity given for the distribution of tasks in such a way that each physician may do the kind of work for which he is best fitted. Differences in natural endowments and differences in opportunities of training can thus be utilized to the best advantage of the workers themselves and of the people for whom they work. When the square peg is placed in the square hole and the round peg in the round hole, society is the gainer. When no provision is made for physicians to concentrate on what they can do best, the public is the loser and the progress of medicine is retarded.

4. *Specialization Economizes Material Equipment and Mental Energy.*—Think of the unnecessary multiplication of professional equipment and the wastage incident to unused equipment in the absence of medical specialization. When, however, physicians restrict their activities to particular tasks, material equipment is reduced to a minimum, and productive resources are not wasted through idleness of armamentarium. Mental friction, also, is greatly reduced when professional activities are not too multifarious. Nothing is more fatiguing and time-robbing than passing rapidly from one task to another; the loss of time and energy involved in the change of direction and content of thought when medical men are compelled to engage in too great a variety of activities should not be overlooked.

5. *Specialization Accelerates Discovery and Invention.*—New knowledge is more rapidly acquired and new practical technical procedures are more swiftly devised and in greater numbers when medical men specialize in particular branches. Here we have to

1. Clay, H.: Economics: An Introduction for the General Reader, New York, 1919, pp. 21-45.
2. Marshall, L. C., and Lyon, L. S.: Our Economic Organization, New York, 1921, pp. 192-203.

deal with a virtuous circle, for, on the one hand, specialism increases knowledge and skill and, on the other, the growth of knowledge and of technic creates new specialties. Human wants grow as knowledge and skill increase; and ever new types of medical men must emerge to supply the services that will adequately satisfy these wants.

CERTAIN DISADVANTAGES OF MEDICAL SPECIALIZATION

It must be admitted that certain possible disadvantages and dangers pertain to specialization in medical practice. For specialization, if not properly controlled, may be harmful to patients, to general practitioners, or to the specialists themselves. To some of the objections that may be raised to medical specialism I shall now take occasion to refer.

1. *Patients Who Independently Seek the Aid of Specialists Often Make a Mistake.*—Patients may, through their own initiative, seek out specialists who are not needed by them at all or who are in a position to satisfy only a part of their medical needs, and that often the least important part. This tendency of patients independently to resort to specialists is to be deprecated. When there is need for consultation with specialists, or for a general diagnostic study by a team, the patient should be guided in his selection of specialist or team by his family physician. Unfortunately, the general practitioner has, in the past, sometimes been to blame in not recognizing early enough the need of special examinations or of team diagnosis in certain of his cases, and this has contributed to the tendency to self-direction among patients. The remedy lies in education of both the general practitioner and the public.

2. *General Practitioners and Specialists Sometimes Fail Satisfactorily to Cooperate.*—General practitioners often assert that they suffer as a result of the vogue of specialism, and they fear that the competition of private groups and especially of the so-called "pay clinics," which are semicharitable institutions, may prove to be detrimental to their interests. They complain that the all-around practitioners are no longer respected as formerly, and that the "specialists swoop down upon their patients and capture them from them." They think that general practice is looked upon "as the recourse of the mediocre and unambitious" or "as a sort of purgatory for the abandoned in medicine." They ask, "Is the general practitioner doomed to disappear?" or "Is the drudgery and labor of a general practice worth bothering with?" [3] In my opinion, their fears are not well founded. The good general practitioner is needed more now than ever before. It is he who must care for the bulk of patients suffering from acute diseases, and for a large proportion of the chronic disorders. Even in the obscure and difficult cases in which specialists and teams are desirable, the general practitioner should be associated with the specialist or the team in the care of the patients.

Specialists have doubtless sometimes been to blame in their treatment of general practitioners, ignoring them, failing to report to them, not insisting on patients continuing in proper relationships with them, or being negligent in lending support to patients' faith in them. Nothing could be more reprehensible; such conduct is harmful to the patients, to the general practioners and, in the end, to the specialists themselves.

3. *Peculiar Dangers Beset Specialism.*—Specialists, as a class, are exposed to a particular set of dangers, including those of the narrowness and the monotony of the "piece worker," those of loss of adaptability, those of objectionable aggressiveness, those of stubborn opinionatedness, those of boastful self-sufficiency, those of selfish materialism, and those of vanity and arrogance. Special practitioners should be cognizant of these manifold dangers and should be sedulously on guard against them; all special workers should take pains to neutralize as far as possible the evils that tend to accompany concentrated interests and narrow ranges of operation.

4. *The Limits to Desirable Specialism May Not Be Recognized.*—Another disadvantage to which medical specialization is liable is the failure to recognize that there are limits to its beneficial cultivation. In general, the good that results from division of medical tasks and from differentiation of professional functions far outweighs the evil. Modern medicine is inconceivable without specialism, which promises in the future to increase, I believe, rather than to diminish. Abolition of specialism would compel a return to a darker age of medical practice. But recognition of the dangers of specialization and of the limits beyond which it should not be carried is very necessary if it is to be made ever more useful to society. Regarding the limits set to specialization, though in all probability there will be a still greater extension of specialized clinical technic as physics, chemistry, biology and psychology continue to be applied to the solution of our diagnostic and therapeutic problems, it will be found that certain kinds of medical practice are, less than other kinds, susceptible of task-division. And besides the limits to be set to specialization on the analytic side, those on the synthetic side are worthy of careful consideration. There can be no advantage for practice in an analysis that outruns synthesis. Proper provision must be made for correlation of the activities of general practitioners and specialists, and for the integration of their results into unified services. There is much so-called group practice today that is not team-work in practice, for it consists merely of accumulating facts without subsequent coordination and integration of the facts. It is in "the knitting together of specialists" into a well-coordinated producing mechanism that group practice of the better sort or team-work in practice has to find its place (see below). And what that place is to be will depend to a large extent on (1) the administrative ability and administrative technic that the practicing teams can develop, and (2) the number of patients who will, through the advice of their family physicians, come to desire the services of such cooperating groups. The length, then, to which subdivision of medical tasks can advantageously be carried will depend partly on the nature of the tasks themselves, partly on the progress made in acquiring knowledge and improving technic, and partly on the management of, and the appeal made by, the correlating and integrating agencies that can be devised.

GROUP ORGANIZATION FOR THE CORRELATION AND INTEGRATION OF MEDICAL SERVICES

The conception of a general diagnostic survey of a patient as a whole (with full consideration of all the somatic, psychic and social elements concerned), though relatively new, is rapidly growing in appreciation in the

3. Billings, Frank: The Future of Private Medical Practice, J. A. M. A. **76**: 349 (Feb. 5) 1921. Wynn, F. B.: The Triumphs and Dangers of Specialism, J. Indiana State M. A. **13**: 338-343 (Oct.) 1920; The General Practitioner, ibid. **13**: 365-371 (Nov.) 1920. Noble, R. P.: The Present Day Status of the General Practitioner, Canad. J. M. & S. **50**: 113-118, 1921.

minds of patients as well as in those of the producers of medical services. All are coming to recognize the dangers of an ever-increasing medical specialization that does not provide for proper coordination of the activities of the specialists and the suitable integration of the results of their work; only through such coordination and integration can unified diagnostic conclusions be safely arrived at, conclusions on which a comprehensive therapeutic regimen dare be based and executed. Thorough analysis of the bodily, mental and social conditions of the patient, adequate synthesis of the facts elicited, and determination as far as possible of etiology and pathogenesis, are the aims of the clinical diagnosis of today. To deprive a patient suffering from an obscure malady of the aid that experts can give, to remain satisfied with the findings of a skilful examiner in a single domain while running the risk of overlooking something vastly more important in another, or to collect the findings of a whole series of specialists in a patient without considering carefully the relative importance of the various abnormalities found and without integrating the isolated data as far as possible into diagnostic wholes, are evils from which clinicians are trying to find ways of escape.[4]

The conversion of the conception of the thorough and well-proportioned general diagnostic survey into fact is the new problem that clinical workers have recently set out to solve. The problem is one of organization, of cooperation, of coordination and of integration; and its satisfactory solution calls, as I have said, for a high order of executive ability and of administrative technic. Specialization, it is asserted, has resulted in conditions in which, before very obscure and complex cases, at least, the special workers may be relatively helpless by themselves and in which they may be comparatively useless, or even harmful, to their patients unless they can be linked up into organizations that will produce complete services adequately controlled, instead of partial services indiscriminately rendered. These difficulties have long been recognized by our more conscientious practitioners. The method, more or less desultory, of occasional consultations was made use of with the object of overcoming them. But this "consultation method" was, and still is, very disconnectedly and unmethodically employed. It may be compared with the consultation method of the generals of the allied armies on the western front before the supreme command was given to General Foch. What is needed, it is urged, is the transformation of the *mobs* of medical and surgical specialists into *teams* of systematically arranged cooperatives, in order that their special activities may be organically united in the interests of the patients to be served. In response to this need, the new institutions of group diagnosis and group therapy, in which general practitioners, internists, surgeons and other specialists combine to perform teamwork are, as a logical sequence, now being established.

Strange as it may seem, this remedy for the evils of an increasingly incoherent specialization has involved the development of new kinds of specialists, namely, (1) specialists in team organization, (2) specialists in team management and, by far the most important, (3) specialists in the integration of the collected results of diagnostic studies made by members of the teams. Compact groups are not essential; overlapping groups are often preferable. The principle of specialization is thus further applied by assigning to certain men especially adapted to their performance the tasks of linking the specialists together into a working organization, and of integrating the results of their activities.

The general plan for team practice will be clear from Chart 2, indicating the route followed by a patient referred for study.

Unless the work of organization, management and integration are efficiently performed, that of the cooperating specialists will not be effective. Organizers, managers and integrators of the type desirable for team-work in practice are as yet not easy to find, though they will doubtless appear if the demand for them grows more importunate. For the post of "group organizer" and for that of "group manager," persons of special administrative ability should be sought; for

CHART 2.—ROUTE FOLLOWED BY PATIENT REFERRED FOR STUDY

* The diagnostic integrator and the therapeutic planner will often be one and the same person.

the post of "diagnostic integrator," men with more than ordinary endowment in what is called "common sense," with encyclopedic knowledge of the medical sciences, and with clinical experience extensive enough to permit them to estimate with accuracy the significance of symptoms and signs and to recognize their juxtaposition in clinical syndromes, should be chosen. These organizing, managing and synthesizing specialists, cooperating with the general practitioners and the analyzing specialists, will then constitute efficient differentiated-united teams for the conduct of group practice.

THE FUTURE OF GROUP PRACTICE

Contemporary opinion is divided concerning the future of team-work in practice.

Some enthusiasts go so far as to say that they believe that the time is not so very far distant when medical practice as a whole will be organized on the team system. They think that groups of increasing size for the "large-scale production" of medical services will gradu-

4. The Rationale of Clinical Diagnosis, in Christian and Mackenzie: Oxford Medicine **1**: 619-684, 1920; The General Diagnostic Study by the Internist Cooperating with Groups of Medical and Surgical Specialists, New York M. J. **108**: 489-493, 538-542, 577-582, 1918; Group Diagnosis and Group Therapy, J. Iowa M. S. **11**: 113-121, 1921.

ally be formed through private initiative, and that, even in the rural districts, groups will be established, with or without local government aid, perhaps as county or township units. They think that the medical schools and their teaching hospitals need to be organized for team diagnosis and for team therapy, such reorganization to supplement (if not to displace) the unit system of departments now prevalent—a system that they hold to be responsible, in part at least, for the failure of medical students to realize the importance of the "knitting together" of specialists into diagnostic teams that will insure complete general diagnostic studies of each patient.

The more moderate supporter of the team-work idea believes that the bulk of clinical work will continue to be done by general practitioners and independent specialists, but that the team or group will always be turned to for aid in obscure and complex cases, especially of chronic disease.

Others, still less sanguine regarding the future of group practice, think that the phenomenon of the diagnostic group represents only a temporary phase, necessary, it is admitted, at this stage of medicine, but destined to be replaced by something entirely different later on.

There are many physicians, however, who see insuperable barriers to any great prevalence of group practice, now or in the future. For them, it seems preposterous to assume that the bulk of medical practice will, even in the distant future, be performed by groups, and they contend that if such an attempt to extend group practice were to be successful, it would lead inevitably to "state medicine."

Groups, they further say, will never become general, owing to certain special objections to them. Among these they emphasize, first, the difficulty of making satisfactory financial arrangements among group members, though champions of the team idea maintain that such a difficulty can always be overcome if the welfare of society demands it. A second drawback that is made much of is the tendency to impersonality of group medical work (like that of any group work in an "industrial, pecuniary and urban economic system"), whereas every one knows that personal relationships are exceedingly important in medicine. To this, team workers rejoin that, though it is true that a tendency to impersonal relations does lurk in specialization and interdependence and in the new medical technology, yet where personal relations are desirable they can easily be arranged for through close contact of the patient with his family physician or with some especially designated and fitted member of the group. The circumstances of a particular situation determine how far personal, and how far impersonal, relations are desirable. Though the number of impersonal relations may increase, team workers are not likely to undervalue the importance of individual human personality and will see to it that it functions in the new environment.[5]

A third objection urged is that it has never been possible to organize the production of personal services in the same way that the production of material goods or wealth has been organized in our industrial systems. Anything like the factory system of organization is, it is asserted, inapplicable to medicine, because the services to be produced differ much among individual patients; though standardization of parts of the diagnostic process may be feasible, there can be no such extension of standardization as is characteristic of mechanical industries organized for the production of a single article. Furthermore, since group practice tends to extend rather than to limit specialization, conditions might develop in which the variety of skill and experience required of the single special worker would become too restricted. Individual specialists might then cease to see the end and the utility of the work they did, and the effect might be to degrade distinctly the life and character of the specialists. Even though specialization and team-work in practice might reduce the economic cost of production of medical services to a minimum, the real human cost might actually be enhanced so that it became oppressive of society.[6] We surely do not desire, these objectors argue, any such excessive division of labor in medicine as will culminate in medical specialists that correspond to the machine tenders of factories, men whose lives are narrowed in scope and deprived of human interests. The monotony of such forms of occupation would, of course, be distinctly harmful.

A fourth reason advanced against the view that group practice is likely to become general is a financial argument. It is maintained that since the gain spirit is tabu in medicine, the organization and management of groups of medical practitioners cannot thrive as do organization and management in industry and commerce, where the employment of capital for the production of commodities and services is unabashedly animated by the gain spirit. Even if the organization of team-work in practice were to be inspired, not by hope of financial gain, but entirely by the desire to produce services of higher value at lower cost for patients, it would not be possible, these objectors say, to secure the cooperation of the more independent natures among practitioners; nor would the rewards for the enterprisers be sufficient to induce physicians to elaborate and execute plans for the combined production of services. The medical profession, they assert, contains but little organizing talent. Men in whose minds such plans could originate, and men with the intellect and will power to make them successful, are likely, they think, to turn to enterprise in fields other than that of medical practice, where conditions are more favorable, where the rewards are greater, and where the risks taken are less.

Finally, still other objectors hold that medical education is improving so rapidly that in a few years from now the graduate of the better medical school, with a little hospital experience afterward, will be so well trained in diagnosis and therapy that he will be able to do by himself alone what only an organized team can now do in the production of medical services. Much of the special technic now thought desirable will, they assert, disappear as experience accumulates and short cuts to diagnosis are discovered. Thus, a man who has worked with the electrocardiograph quickly learns how to do without it in ordinary practice. One who has become familiar with the relation of basal metabolism studies to practical medicine can get along very well without a calorimeter simply by weighing the patient regularly while his diet is controlled. The specialist is, they tell us, a pioneer who develops new methods, which, however, general practitioners can soon learn to do without. But do not those who advance this

5. Consult chapter on Impersonal Relations in Marshall's Readings in Industrial Society, Chicago, 1920, pp. 782-823.

6. Hobson, J. A.: The Social Problem, 1901, pp. 226-230.

argument forget that there will be ever new crops of technical methods under test to replace those that are abandoned? Will not the well trained graduate of the future have, in turn, his own particular problems of specialism to deal with?

But all such discussions of the probable future of group practice are more or less academic in nature. Team-work in practice seems, at present, to be performing a useful function and to be extending. It would seem sensible, then, to avail ourselves of it so far as it is advantageous, avoiding so far as we can its evils, and to leave the distant future to look out for itself. In any case, if group practice is to survive, it must benefit the public and it must be made helpful rather than harmful to the general practitioner. If team-work in practice should prove to be essential to public welfare, medical men must and will devise ways and means through which general practitioners, specialists and teams can all do their work satisfactorily; for the public, to be well served medically, must be cared for by a harmonious rather than by a discordant profession.

SUMMARY

In this address I have endeavored to throw light on some of the problems that confront the practicing profession today. I have referred to the ever increasing variety and complexity of the services that medical men produce in their efforts to satisfy the diagnostic, therapeutic and prophylactic wants of the people. I have called attention to the steadily increasing necessity of division of labor and of differentiation of function among medical practitioners, and have shown how the evolution of medical specialism has more or less corresponded to the growing need. I have tried to show how diagnosis and therapy benefit by specialization, which increases productivity, facilitates the acquisition of accuracy, speed and skill, provides for a better distribution of tasks among practitioners, economizes material equipment and mental energy, and accelerates discovery and invention. Though it yields these benefits, specialism, as I have indicated, is beset by its own special dangers; and it should be kept within certain desirable limits. I have dwelt at some length on the present day requirements for the correlation and integration of the services of general practitioners, internists, surgeons and specialists in the making of general diagnostic surveys and in the execution of comprehensive plans of therapy based on such general surveys. I have commented on the groups and teams that are being organized to meet this need, and on the emergence of new kinds of specialists—especially the diagnostic integrator—necessitated by team-work Finally, I have detailed some of the conflicting views regarding the proper field of team practice at present and in the future. I shall be glad if my remarks have been of interest, and I hope that they will provoke a lively discussion.

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Medical Abbreviations.—The Association of the German Medical Press has appointed a committee to study the subject of the best form for abbreviations of the most commonly used medical technical terms. Schwalbe has a sarcastic article in a recent *Deutsche medizinische Wochenschrift* on the absurdity of some of the abbreviations at present in vogue. The "Widal," for example, now may mean either the agglutination test in typhoid or the hemoclasic test for liver functioning. The committee is to present its report at the annual meeting in September.

CARCINOMA OF THE BREAST

WITH A CONSIDERATION OF PRECANCEROUS CONDITIONS *

BYRON B. DAVIS, M.D.
OMAHA

In March, 1921, I reported 190 cases of carcinoma of the breast, in all of which operation had been performed more than three years before. Questionnaires were sent to all these patients, and replies were received from 122. Of the 122 cases traced, seventy-five were free of recurrence, forty-five patients were reported as having died, and two were suffering with recurrences.

Computing percentages on the 122 gives a little more than 61 per cent. well and free of recurrence from three to twenty-one years after the operation. This is manifestly too high, since answers are more likely to be sent concerning successful than unsuccessful cases. Computing the results on the entire 190 cases gives us almost 40 per cent. of patients well and free of recurrence for from three to twenty-one years. This is too low, since some, at least, of the sixty-eight patients that did not answer are probably living and well. The true percentage of those remaining free of return probably lies somewhere between these figures.

It is not claimed that any of these patients are cured. A three or a five year period without recurrence is a purely arbitrary standard. I have had patients remain well five, eight, nine and ten years, and then report with recurrence, from which they later died.

The length of time the lump has been known to exist, or the apparent progress the disease appears to have made, is not nearly so good a guide to the prognosis as one would think. The first beginning of cancer is, unfortunately, painless. The lump is usually discovered accidentally, and the date of its discovery bears no relation to the date of the beginning of the disease. Often physicians are consulted about breast tumors, which the patient has just discovered, when the disease is found already far advanced and of very grave prognosis. Other women consult us with the frank statement that they have been aware of the disease for many months or even years, and it is found, clinically and pathologically, at a very early stage, with no palpable invasion of the axillary glands.

Why one breast cancer progresses so rapidly and sweeps the victim into an early grave and another is so mild as to seem almost benign never has been satisfactorily explained. There is no reason to doubt that the cell energy in one case is so great that it beats down all defenses the normal tissue cells are able to build up, while in another the attack is less overwhelming and the tissue defense is able to hold the growth at bay for a long time. In some cases the defense is feeble, scarcely any fibrous tissue being formed, and the lawless cells proliferate almost at will. In others, the fibrotic enveloping movement is so prompt and effective that the cancer cells have a struggle for existence. Is it not possible that, under favorable conditions, the cells may be smothered and rendered inert, and cure of the carcinoma take place without any one suspecting it ever existed? At the risk of criticism, I am almost certain that early malignancy is frequently cured spontaneously. At the opening of the battle there is no

* Read before the Jackson County Medical Society, Kansas City, Mo., Nov. 22, 1921.

means of knowing how forcible the attack, or how effective the defense; therefore an accurate prognosis is often impossible.

Again I want to emphasize a statement made several times during the last few years, that a local recurrence does not signify that the case has become hopeless. Several of my pateints have been operated on for a first, a second, and even a third local return of the disease; one of them now eleven years after the last recurrence is in perfect health. The operation for local return should be carried out along similar lines, and with the same boldness as the original operation. Since adopting the form of operation I am doing now, I am glad to say, local recurrence is much rarer than before.

The usual textbook descriptions of the clinical manifestations of breast cancer are very much out of date. Most of the modern textbooks describe advanced cases —and I hope to live to see the time when adherent skin, retracted nipple, fixation to the pectoral fascia, extensive axillary involvement, in fact, all the classical symptoms so familiar to all of us, will become as rare as the huge ovarian cysts of the last century. Every time I see one of these classical breast cancers it gives the feeling that some one has blundered. Even now, many women have the old time idea that cancer is incurable and, for this reason, keep away from the doctor until the pain becomes unbearable. To the credit of the medical profession, few cases of advanced cancer of the breast are encountered now in which a member of the medical profession could be censured for the delay.

The persistent propaganda carried on by the American Society for the Control of Cancer during the last few years, culminating in cancer week, so recently celebrated, is bearing some fruit. It is certainly adding greatly to the responsibilities of physicians. We have thrown down the gauntlet and there must be no backing down. There must be no superficial examinations, no time consuming hesitation, no trifling with a possibly early malignancy, no admonition to "wait and see what develops."

The public, or, at least, a large proportion of the thinking public, has learned enough about cancer so that there will be a material increase in the number of early operations. Continued education of the public to the fact that cancer is not a hopeless disease, and that the earlier it is operated on the better the prognosis, is sure to result in a larger number of operations in favorable cases. Many will consult us so early that a positive diagnosis will not be easy. But, when one can make a positive preoperative diagnosis, it is too late for the best results. The ideal operation for breast cancer is the one that begins as an exploratory incision. The frozen section made at once by a competent pathologist, together with an intelligent macroscopic examination of the growth after its removal, is coming to be the customary method of making the diagnosis.

If any woman could be kept under sufficiently close observation, she could be assured against death from cancer of the breast. I should like to see tried the experiment of keeping 1,000 women under the observation of a trained clinician for a series of years, in order to see if the foregoing statement cannot be made good. And, if proved true, why could it not be extended to 100,000 women, or to all the women of cancer age in the United States? It could be applied equally well to cancer of the uterus, of the lip and, in a less positive degree, to cancer of the internal organs.

Such an experiment is going to be carried out to a certain extent. Several already have decided to go to their physician every year to ascertain whether or not they are cancer free. Many life insurance companies are offering their policy holders an opportunity for periodic examinations free of charge. If such examinations are made with the view of determining the presence or absence of carcinoma as well as the condition of the heart, lungs and kidneys, it will be greatly increased in practical value. It will, at least, be a great aid in lessening the number of patients getting into a nonoperable condition before the disease is discovered.

Such an idealistic machine as has been suggested is not yet in working order. For the present we can act only when cases come to our attention. A lump in the breast should be looked on as an emergency surgical condition. Often it will be impossible to say whether the growth is benign or malignant. If cancer is already present, the cell division, the infiltration of tissue, the growth along the lymphatics will not stop and mark time, while a slow thinking and slow acting physician is looking wise and waiting for symptoms which will enable him to make a positive diagnosis.

When breast cancer is present and its removal is decided on, it should not be forgotten that no operation is better than an inadequate or a bungling operation. Death has often been hastened by operators who did not fully comprehend the problem before them. We are accustomed to guard the intra-abdominal viscera from contact with pus, when operating for infections, in the most painstaking manner; it is much more important to protect the normal tissue from contact with cancer cells when operating for cancer. It is vital for success in this work that the dissecting knife, at all times, do its work at a distance from all tissue having the least probability of cancer invasion.

Many local recurrences are unquestionably due to accidental implantation of cancer cells during the progress of the operation. If, inadvertently, one cuts into tissue that looks suspicious, the knife and other instruments that might have been soiled, and the gloves worn by the operator and assistants, should be pronounced unclean and discarded for new. The suspicious tissue should be swabbed with phenol (carbolic acid) or cauterized with the actual cautery, and a more remote periphery selected. It is usually possible to maintain the dissection so far radially from the lesion that no tissue that looks or feels malignant is even seen. It is only in advanced cases that difficulty should be encountered in keeping away from cancerous tissue.

The old-time procedure of slashing off the breast and tearing out the axillary fat and glands has been relegated to history, and the lines of the operation are definitely laid down in accordance with the operator's idea of the routes of dissemination. Except the very local neighborhood infiltration, extension, in carcinoma of the breast, is now conceded to be chiefly through the lymphatics. Metastasis by way of the blood vessels plays a minor rôle, and, after it occurs, all hope of a successful operation is abandoned.

Involvement of the lungs, pleurae, liver, etc., formerly explained as metastases through the blood stream, has been shown to be due to permeation of the lymphatic channels along the routes already pointed out. We are indebted to Handley for pointing out clearly the rôle of the lymphatics in the dissemination of cancer. Pathologists and clinicians alike have largely accepted his views.

Following the line of reasoning laid down by Handley, if the chief route of dissemination were embolic, through the blood stream, we would expect the sites of the metastatic growths to be similar to the locations of embolic infections, such as are seen in pyemia. Their distribution in the two conditions is far different. In pyemia, the frequency of splenic and of hepatic abscess is as two to three; in cancer of the breast, the frequency of splenic and of hepatic growths is as one to fourteen. One can hardly conceive an embolic cancer infection, by way of the blood stream, differing in its distribution from an embolic pyemic infection. The distribution of secondary deposits from cancer of the uterus, stomach, breast and lip is very different. If it was due to an embolic process through the blood stream, it ought to be the same. The secondary deposits depend on the location of the primary growth, a fact inimical to the idea of a blood stream infection. In cancer the extension seems to radiate in all directions, but most rapidly in the direction in which the lymphatic channels are largest and most numerous.

For a long time it was supposed that extension along the lymphatic was accomplished by the cells being carried along by the lymph current; it has been found that the growth extends almost as rapidly against the current as with it. This bears out Handley's contention that the cancer cells grow by budding, along the lymphatic channels, by direct growth, or "permeation." Accepting Handley's ideas, I have for several years been planning and shaping my operations in such a way that the lymphatic channels are cut off as far away as possible from the primary growth.

TECHNIC OF OPERATION

Keeping clearly in mind the channels along which the cancer cells advance centrifugally, a definite type of operation has been worked out calculated to head off all these highways of dissemination. If it is not possible to get outside the zone of actual lymphatic permeation, the operation is doomed to failure. If we get beyond the point of actual invasion around the entire periphery and all the cancer-bearing tissue within the blocked off area is removed, there is a high degree of probability that the disease will be completely eradicated. The operation described is much like that of Handley, but there are enough differences, I think, to warrant a description.

A routine skin incision is never made. It should be planned according to the location of the neoplasm, which should be in the center of a circular or wide elliptic incision. The margin of this incision should be 2 inches (5 cm.) away from the infiltrated area. Another incision begins on the upper arm at the insertion of the pectoralis major, and sweeps inward with a downward curve along the border of the pectoral, well above and outside the axilla, and meets the central incision at the most advantageous point for closing in such a way as to form the most comfortable and least disfiguring scar. The lower leg of the skin incision extends from the lower margin of the central incision downward and inward along the linea alba almost to the umbilicus.

The custom of removing a very large skin area had its origin in the mistaken notion that cancer extended mainly along the skin. It is now known that the chief mode of extension is along the fascial planes, and that skin invasion is due to the cancer cells reaching the skin by permeation along the lymphatics which pass from the fascia outward. It is seldom necessary to remove so much skin that it cannot be sutured, and skin grafting is never required except in very advanced cases.

The skin is dissected from the underlying tissues, care being observed to take with it as little as possible of the subcutaneous fat. The dissection is carried inward as far as the opposite border of the sternum, and is loosened upward as far as the clavicle. The dissection is carried outward far enough to lay bare the digitations of the serratus magnus and the border of the latissimus dorsi, and at the lower end of the incision, the upper one fourth of both recti abdomini and the upper attachments of the external oblique are laid bare over a large area. It should be borne in mind that the main object of the extensive undercutting of the skin is to enable us to get rid of the widest possible area of lymphatic-bearing fascia, and in proportion as we succeed in this will our percentage of permanently relieved cases increase.

The next step is to block out this extensive area at the extreme limits of the skin dissection. It is never well to work from the breast toward the periphery; one should work from the periphery toward the common center. To work from the breast outward would run the chance of squeezing cells growing in the lymphatics still farther, and perhaps driving them so far away that they cannot be reached. Thus, in the very act of doing an operation to save life, it is possible to render a curable condition incurable. The danger of dissemination during an operation by rough and ill advised handling is very real.

The first step of the blocking off process begins in the axillary region. The sternal portion of the tendon of the pectoralis major is severed at its insertion on the humerus, and the muscle is rolled inward, its fibers being split just below the clavicle, the clavicular portion being retained. The upper margin of the axilla is opened, the costocoracoid membrane cut, and the insertion of the pectoralis minor to the coracoid process also cut. This muscle ought always to be removed entire, not cut and later united as sometimes advised; it lies too near to the so often infected subclavian glands to be safely retained. Sharp dissection is the only safe way to clear out the axilla, and the contents are removed by dissecting, from the apex downward, cutting close to the axillary vessels and leaving no fat adhering to them. By dissecting carefully and seeing everything clearly, there is no risk of accident. If an obviously cancerous gland adheres to the axillary vein and the wall of the vein is apparently infiltrated, the vein is ligated above and below the invaded portion, and the intervening segment removed.

The dissection is now carried inward just below the clavicle, the fat and glands below being carefully separated from the artery and vein above. The blocking out has now proceeded to the inner extremity of the clavicle; it next proceeds across the upper portion of the sternum, the fascia being dissected from the sternum and far enough to reveal the costal cartilages. This shuts off all communication with the opposite breast and from the retrosternal glands.

The dissection proceeds downward from the lower sternum, and blocks out and removes by reflecting upward the fascia covering the serratus magnus and border of the latissimus dorsi and reflecting it inward. If the disease is primarily located in the outer hemisphere of the breast, I always remove from three to five of the upper digitations of the serratus magnus.

This completes the blocking out process, the whole periphery of the portion to be removed having been raised and rolled inward toward the breast.

It is now easy to remove the entire blocked off area. By a few strokes of the knife, the large island of tissue is severed from the chest wall. This is done as cleanly and neatly as possible. Nothing impairs the appearance of the operation so much as to leave irregular and ragged tufts of muscle standing out over the thoracic wall; but such a spectacle is of minor importance compared with the danger of leaving some cell groups which would nullify the operation, or of leaving behind devitalized tissue which might complicate smooth convalescence.

Hot packs are placed over the raw area to aid hemostasis. All bleeding vessels, having been caught with forceps as they were cut, are now methodically tied with plain catgut. A dry wound is of the utmost value to insure smooth healing.

A stab wound is made through the external skin flap a little below the axilla, and through it is drawn, from within out, a small rubber drain, which is removed in twenty-four hours.

The skin has been undercut over so large an area that its borders are easily brought together without tension. Three or four silkworm-gut sutures are made to bring the skin edges into contact at appropriate intervals; and a running, interlocked stitch of horsehair or dermal suture quickly and nearly approximates the edges of this long skin incision.

A copious sterile gauze dressing is put on and bound on with a thoracic jacket. It is well to have a pad so placed as to push the skin well up into the axilla and thus fill in the space. The arm is kept well abducted from the thorax, and the elbow rests easily on a pillow. The patient is encouraged to use the arm from the first. No trouble about motion has been encountered since keeping the arm well away from the side and insisting on early and frequent movement. The second morning after the operation, the patient is propped up in bed, if there is no contraindication; and after the third or fourth day, she spends a part of each day in an easy chair.

The most important element in the success of this operation is to keep the dissection as far away as possible from diseased tissue, and is most promising when the whole procedure can be carried out without seeing any cancerous tissue. This is possible in cases with a very considerable amount of infiltration and even when permeation has advanced along the lymphatics several inches.

Intensive deep roentgen-ray therapy is made use of after every radical operation for breast cancer. It is repeated about every four weeks for from six to ten months as a routine. I am not yet fully convinced of the value of the roentgen ray; the dosage delivered to the deeper tissues seems yet too uncertain and hard to measure. I am positive that much ill-advised irradiation has been carried out and that there must be a great deal of exact scientific observation and comparison of results over long periods before this kind of therapy can be considered really standardized.

Some patients do not come to the surgeon until the condition is so far advanced that, for the credit of surgery and the good of the patient, it is better that no operation be done. Among the conditions that render operation futile may be mentioned: (*a*) deep involvement of the chest wall; (*b*) fixation of the axillary mass; (*c*) very extensive skin involvement; (*d*) enlarged and fixed supraclavicular glands; (*e*) secondary growths in the lungs, liver or other viscera, and (*f*) bone metastasis.

IMPROVEMENT OF RESULTS

We now have reached the most important phase of the subject under discussion. How can the great number of deaths from breast carcinoma be prevented? The radical operation has been developed about as far, and is as extensive, as seems practicable. That there will be any great improvement on the present technic is doubtful.

Not much of real value has come yet from the roentgen ray or radium except as an adjuvant of surgery. Many rather dramatic claims have been put forward, and undoubtedly wonderful immediate results have been obtained, and pain has been mitigated; but this does not mean that the patients have been cured. Roentgenologists have thus far been unable to place the heavy dosage at the point most needed without a destructive superficial dose. I am watching with much interest the development of the very high voltage machines so greatly acclaimed of late, and sincerely hope they will justify the claims made for them.

In the meanwhile, as far as greatly improving the present results is concerned, we are up against a stone wall, unless (1) the custom is established of operating on patients very early while the disease is yet localized within the mammary gland or its immediate environment, and susceptible of complete removal, and (2) it is learned how to recognize and cure precancerous conditions.

The public propaganda is likely to accomplish something, perhaps more than we really think, in securing the patients' cooperation. But the gain in time of operation will be limited because, first, it is too much to expect a very large portion of the laity to be sufficiently impressed, and, secondly, the disease is insidious in its onset, and often greatly advanced and widely disseminated, before it is suspected there is anything wrong.

It has for a long time been an idea of mine, perhaps too idealistic to be realized, that the mitigation of the awful menace of breast cancer, and of all cancers wherever located, is in the recognition of precancerous conditions and their correction or removal. The success of the war against cancer will depend less on our ability to detect formed cancer than on our learning how to decrease the incidence of cancer.

It is almost axiomatic that cancer never originates in perfectly normal tissue. In every case the pathologic proliferation prepares the seed from which carcinoma germinates. The crux of the whole question rests on the possibility of learning what functional or organic changes in the breast prepare a suitable soil, how such changes may be recognized, and how far we are justified in going, possibly by doing destructive surgery, before the cancer has yet come into existence.

Standardized agreement as to what constitutes these precancerous conditions is wofully lacking, and this is attested by the diverse views of different pathologists and surgeons. If the present knowledge of the histogenesis of breast cancer is ever to be of practical value, the surgeon and the pathologist must work together as they have never done before.

Cancer cells are recognized only by their behavior. It is impossible yet to distinguish cancer cells from normal cells except by their environment. Since this is so, who can tell the moment the benign cell ceases to be benign and becomes malignant? Who can tell whether the cell, before it breaks through the basement membrane, is malignant or benign? Is the cell innocent before it bursts through the basement membrane, and is it, by the accident of migrating from its former and natural epithelial environment and getting into the surrounding connective tissue, converted into a cancer cell? Pathologists seem to believe that the cell has become malignant before its migration, and that this fact explains why it breaks away from its former environment; but the microscope recognizes it as a normal cell until it changes its habitat. Perhaps biologic chemistry may yet prove that the influence of the connective tissue converts the normal migrated epithelial cell into the cancer cell.

There is a fairly general opinion that many cancers have their origin in fibro-adenomas, in duct cysts, and in chronic cystic mastitis. But when two such trained investigators as Bloodgood and Sir Lenthal Cheatle reach such conflicting conclusions, from the examination of pathologic breasts which must have been essentially similar, it must be admitted that we are yet far from having a standardized basis by which to judge the changes that must occur in breast tissue to render it precancerous.

Cheatle shows a large number of cystic breasts, in parts of which the malignant process is just beginning. He shows others that yet show no malignant change; but the condition otherwise is so like the first series that he feels justified in concluding that they would have occurred if the breast had not been removed. He states that in the cysts proliferation of epithelium is constantly going on, and as long as it remains within the capsule of the cyst it is considered benign, but is liable at any time to invade the fibrous tissue outside the cyst wall, when it is called cancer. The conclusion is forced upon us that the line separating benignancy from malignancy is a very narrow one and at best somewhat imaginary.

As nearly as I can determine from a recent article by Bloodgood,[1] he has reached the conclusion that mammary cysts practically never lead to cancer.

Nicholson of London, in commenting on Cheatle's article, agrees, in the main, with all his conclusions. Nicholson states that he has insisted for years that hyperplasia passes insensibly into carcinoma, and that "there can be no difference in opinion as to the dangers of cystic changes in the breast."

Ewing states that of all the breasts excised for cystic disease that he has examined, pronounced precancerous changes or miniature carcinomas were found in 50 per cent., and that very few cancerous breasts are found that do not show phases of chronic mastitis in outlying portions. He says: "It is therefore clear that chronic mastitis is a very important predisposing condition to mammary cancer." Although Ewing concedes that chronic mastitis sometimes retrogrades and ceases to be troublesome and that simple cysts may disappear spontaneously, he considers that the "disease is generally progressive and most cases eventually terminate in carcinoma or surgical removal."

In another connection, Ewing says: "The growing tendency to remove the breast for recognized chronic mastitis or suspected carcinoma, while probably sacrificing some organs unnecessarily, has justified itself in the writer's material, by securing the early removal of some miniature carcinomas, and more precancerous lesions."

Finney says that his study of some predisposing causes of cancer, and especially chronic cystic mastitis, "has tended to strengthen the position of those surgeons who have advised the complete extirpation of every breast, the seat of any one of these conditions." Finney also puts himself on record in favor of the removal of every benign breast tumor.

Cheatle's answer to the question, "How shall cyst-containing breasts be treated?" is so pertinent that I am taking the liberty of quoting it in full:

> After consideration, I am bound to say, I would advise the removal of every breast which is obviously clinically cystic. I would advise this course if only a single cyst were clinically present, for the reason I have given. In practice, I leave the nipple and the axillary lymphatic glands. Some surgeons, I know, are removing cystic breasts as the means of getting rid of cystic breasts, and my evidence compels me to believe that breasts that are known to be cystic ought to be excised with the object of preventing a far greater calamity. I am sure cysts are dangerous.

Paul expresses the belief that in the involution period all cases of unyielding mastitis should be treated by amputation of the breast.

I have quoted these authorities to justify the position taken with reference to these conditions we call "precancerous." The imaginary line between many of these cysts and especially chronic cystic mastitis is so narrow that the best trained pathologists often differ in their interpretation. If Ewing is right when he says most cases of persisting chronic cystic mastitis finally terminate in cancer, we are not justified in continuing the do-nothing policy usually followed in such cases. It is better by far that an occasional breast be sacrificed unnecessarily, if, by this course, many others are rescued from a cancer death. A simple amputation produces a slight scar as compared with the radical operation for breast cancer.

Younger women with mastitis have a fair chance of recovery, and I would not think of adopting such radical measures with them, unless they are great sufferers and the disease is unusually extensive. From and after the age of 35, the time cancer is most likely to develop, if the mastitis is pronounced, and especially if pain and tenderness are prominent symptoms, after stating the facts to the patient as nearly as possible, she is given a chance to decide what she wishes done. Several, since this plan was adopted, have elected to have their breasts removed.

Until the last year my logic was not convincing enough, or my courage not sufficient, to take this position. More lives will be saved and much suffering prevented if these patients with recognized precancerous conditions are given the benefit of the doubt. It is better to see an occasional breast sacrificed that would never have become cancerous, than never to remove a breast until its malignancy is so apparent that no doubt can remain.

Every adenoma and fibro-adenoma ought to be removed. By this it is not intended that every girl or young woman who thinks she has discovered a lump in her breast should be subjected to operation. As all know, many of these cases are more mental than physical, and all that is needed is to reassure the patient and stop her worry, never failing to keep her under obser-

1. Bloodgood, J. C.: The Pathology of Chronic Cystic Mastitis of the Female Breast, Arch. Surg. 3: 445 (Nov.) 1921.

vation till we are sure the little trouble she had has disappeared. Even young girls occasionally have definite fibro-adenomas; these should be removed.

In spite of all statements to the contrary, there is room for much optimism in the outlook for improvement of results in breast cancer. It lies, first, in more early operations, while the disease is removable, by intelligently carried out, radical operation; and, secondly, in a clear recognition of the conditions which have been found to be precancerous, and treating them courageously.

LOCAL SPASM OF THE ESOPHAGUS AND IMPAIRMENT OF DEGLUTITION

FOLLOWING LOCAL INJURY OF THE PHARYNGEAL AND ESOPHAGEAL MUCOSA

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The following report, written at my suggestion by the patient herself, is deemed worthy of recording because the patient is a trained physiologist and therefore qualified to note and analyze the physiologic states (peripheral and cerebral) entering into the periodic esophageal spasms and impairment of deglutition that so frequently follow local injury to the upper alimentary tract. The patient (Dr. Emma Kohman-Ivy) has a normal and stable nervous organization, and hence unusual worry or fear is eliminated.

These points in the report seem of physiologic and clinical importance:

1. The long continued difficulty in initiating the reflex part of the swallowing act was probably due to the extensive destruction of the pharyngeal mucosa and with it the endings of the glossopharyngeal nerve. This nerve, which innervates the "chief spots," is the chief factor in initiating the reflex stage of deglutition. The gradual recovery from this difficulty is due either to central reeducation or to partial regeneration of the end organs of the glossopharyngeal nerve.

2. The spasm of the esophagus on swallowing food always occurs at the stricture. As the stricture is located in that part of the esophagus having no local nerve centers (Auerbach's plexus) and made up of striated musculature alone, the spasms represent a long reflex initiated by overdistention of the normal tissue near the point of the stricture, the vagus nerves serving both as afferent and efferent pathways for the reflex. Overdistention of the normal esophagus produces similar local spasms (secondary contractions).

3. The fact that the same food, having the same physical consistency, does not always initiate the spasm, and the further fact that active cerebral states (attention, anxiety, fatigue, etc.) predispose to the spasm are probably due to varying degrees of tonus in the esophageal musculature. But there may be another factor in this particular case. There is some experimental evidence that the glossopharyngeal nerve is an important factor in maintaining the normal degree of esophageal inhibition by way of the vagus nerves. And since the injury in this case involved extensive destruction of the glossopharyngeal nerve endings, this factor by itself might have induced some esophageal hypertonus. Destruction of the esophageal mucosa, and with it vagus inhibitory afferents in the region of the stricture, is probably also a factor.

4. Whether the improvement that seems to parallel repeated dilations of a cicatricial stricture is due to mechanical action on the scar tissue or on the normal tissue, it is evident that the act of dilation may itself induce a prolonged esophageal spasm, probably through the same mechanism as that induced by a bolus of food. The headaches appearing at the third or fourth hour following dilations are probably induced by hyperirritability of the afferent vagus endings in the region of the stricture caused by the dilation. This question calls for further investigation, experimentally and clinically.

PATIENT'S REPORT

History.—April 27, 1919, while I was doing a microchemical determination of nitrogen in the physiologic chemistry department of the University of Chicago, by a modified form of the Folin and Farmer method, about 4 c.c. (65 minims) of concentrated sodium hydroxid, heated to boiling by contact with sulphuric acid, was shot into the back of my throat, without touching the lips or anterior portion of the tongue. Some was reflexly swallowed.

Within five minutes the throat was swabbed with dilute acetic acid, as the injured parts could not all be reached by gargling, and some of the dilute acetic acid was swallowed, but after about five minutes I was unable to perform the swallowing act. Marked edema of the epiglottis and false vocal cords occurred in about twenty minutes, but tracheotomy did not prove necessary.

For five days it was impossible to perform the swallowing act. During this time water was administered by rectum. At the end of the fifth day liquid could be swallowed in very small portions, but this was accompanied by very much coughing. There was less coughing when my body was in a reclining position during swallowing. It was later found that the coughing was due to the defective action of the epiglottis, as quite a bit of it (about one third) as well as of all other parts injured had sloughed off. From that time on, foods in liquid form or very soft and moist foods were taken in as large quantities as possible, until the end of the sixth week. By that time the body weight had been reduced 20 per cent.

Two weeks after the injury I was permitted to leave the hospital, as the temperature had returned to normal and I was able to walk and in large part care for myself. On the second morning out of the hospital I took a short walk, came back and ate some ice cream, and took a sudden chill, followed by a sudden rise in temperature to 103. This was followed by heavy perspiration. The temperature soon came down to normal, but for the next three days rose again to 101 or 102, and was kept that low only by bathing the head and parts of the body with ice water. After having been home five days I returned to the hospital. Examination of the chest revealed that bronchitis had developed. The cause of the bronchitis was most probably due to the passage of foods and fluids into the trachea, made possible by the lesion of the epiglottis and false cords. The infection was most severe on the right side, as I had been lying on that side most of the time while taking food. From that time I took my food while lying on the abdomen with the head hanging over the side of the bed. The liquids had to be sucked up through a straw. By eating in this manner, coughing during eating was stopped and the infection of the bronchial tubes cleared up. This method of eating was continued for many weeks, until I had learned to swallow despite the defective epiglottis. I still have some difficulty in swallowing liquids unless my head is bent slightly forward while drinking.

About the fourth week after the injury it became more difficult to swallow, and even liquids could be swallowed only in very small quantities. At the end of the sixth week the attempt to dilate the esophagus by the Sippy method was successful. From that time on dilations were done at first twice each week, later once a week, then every three weeks, and finally only when I began to notice marked difficulty in swallowing. The last dilation was made the latter part of

May, 1920. During this time swallowing improved continuously, liquids could be swallowed more easily than any solids, even if well masticated, until at the present time (one and one-half years after the last dilation), when swallowing is practically normal.

For about the first week I could not speak above a whisper, and for months my voice was very weak, but is normal at the present time.

Difficulties Encountered in Attempting to Swallow.—For five days the swallowing act could not be performed. At the end of the fifth day I was able to swallow orange juice if taken in very small portions. It was very difficult to swallow milk during the first four weeks following the injury, owing to the large amount of mucus present. Ice cream offered the least difficulty in this period of gradual recovery of the swallowing act.

There were two points at which difficulty was experienced in trying to swallow. One was the back part of the throat, and the other at the point of the stricture in the esophagus. The back part of the throat was the point of trouble during the first five days, during which time nothing could be swallowed. After that time food had to be forced through that part of the throat voluntarily with considerable force. This made it necessary to have all food in a semisolid or liquid form before it could be swallowed. Certain sticky, mushy foods, such as sweet potatoes, often caused considerable trouble, and even yet there is some difficulty in getting pasty foods, such as sweet potatoes, past this point of the pharynx. On the other hand, a smooth baked egg custard was swallowed with little difficulty even during the first six weeks. For almost two years, food would very often pass into the nasopharynx and even come out of the nose when a strong attempt was being made to swallow.

The difficulty that occurred in swallowing at the point of the stricture in the esophagus was not experienced until the end of the second or third week after the injury. This gradually grew worse until after the dilations were begun. Portions of food, either solid or semisolid, would lodge above the stricture, and liquids would go through the narrow opening very slowly. While food was lodged here, nothing could be swallowed. Unless this food was hard, there was no pain but simply a sensation of pressure similar to that of pressing with the finger on that portion of the throat. This was usually accompanied by a great deal of gagging, such as would occur on sticking the finger down into the throat. The esophagus seemed to be working to move the food down. This was manifest by the sensations occurring there and by sounds which I could hear and which were many times heard by those sitting at the table with me. When the particle of food finally moved on, it went with a "snap," often making a noise that those sitting near me could hear. As the stricture was just above the manubrium sterni, the food could often be dislodged by rubbing down on that portion of the throat. It was also often dislodged by taking a large swallow of water. The water did not go through, but in coming back would bring up the bolus of food. Vomiting movements were often started by putting the finger down in the throat, causing the esophagus to relax, thus releasing the lodged particle of food. Often, however, all efforts would fail for periods of one and two hours, during which time nothing could be swallowed. After I became accustomed to its presence, I could relax and the food would move down without any further efforts on my part. Up to the time of the first dilation, swallowing became more and more difficult, so that I worked at eating most of the day, to hold my weight. After the first dilation, swallowing became easier and I began to gain weight immediately. At present swallowing is almost normal. Particles of food lodge only occasionally, and then only for a short time.

The difficulty of food lodging at the stricture now occurs only when my attention is strongly diverted from swallowing, when I am anxious or worried, and when eating under unusual environmental conditions. During the first six or eight months following the accident, there was another factor which predisposed to this dysphagia, namely, fatigue. This was such a definite factor during those months that I made it a practice, if I was tired, to lie down and relax before every meal. The size of the bolus does not seem to be an etiologic factor.

The "after image" following the passage or removal of a particle of food that had lodged at the site of the stricture was continuous and not intermittent in type, gradually decreasing in intensity. Its duration was from ten minutes to an hour, depending on the time the food had been lodged at the stricture.

Treatments and Their Effects.—At the first dilation, six weeks after the injury, it required considerable force to push the small enlargement on the end of the wire, slightly less than 3 mm. (⅛ inch) in diameter, through the stricture.

As the throat healed more it was not so sensitive and consequently was little irritated by the dilations. The passage of the olives through the strictures did not cause much pain when everything went normal, but there was always some bleeding. Swallowing was very easy soon after the dilation, but in a few hours there seemed to be an edema (swelling) at the point of the stricture which made swallowing more difficult. A soreness and an aching pain developed at the point of the stricture within a few hours after the dilation, which was felt constantly for a day or day and a half, and became more severe during swallowing. The soreness during swallowing often lasted three days after the dilation. About three or four hours after the dilation, a headache developed which lasted for the remainder of the day (dilations were always done in the morning). As time went on, however, there was less bleeding at the time of dilation, and less soreness and headache followed.

On two occasions the following difficulty was experienced in the dilation process: The olives were pushed down through the stricture with relative ease, but on trying to withdraw them they were found to be immovable. Although great force was applied, the olives could not be withdrawn. After the attending man[1] had given up and planned another procedure, spontaneous relaxation occurred and the olives fairly fell out. The first time this occurred, relaxation took place in a few minutes; but the second time it was about fifteen minutes before the olives were removed. These treatments, especially the second, were so severe that the doctor and I were both ready never to have them repeated. After that, flexible tubes of different sizes were used with the usual wire guide.

The cause of these difficult experiences is not clearly known. It was thought that there might have been a shelf of scar tissue on which the olive may have caught, or a torsion in the esophagus. The roentgen ray did not reveal any such stricture, however. I myself believe it was a spasm, for as soon as it occurred I was aware of it, owing to a "clamping" sensation at that point, a sensation which I often felt when a piece of firm food lodged there, which likewise could not be removed until there was a relaxation.

Localization and Character of the Stricture in the Esophagus.—The stricture is about 2.5 cm. (1 inch) long. It is located 3 cm. (1 3/16 inches) below the lower level of the thyroid cartilage. The greatest diameter of the lumen at the stricture is anteroposterior, and one year after the injury was 1 cm. (⅜ inch) in diameter. At the present time (two and one-half years after the injury) the greatest diameter, about 1.5 cm. (9/16 inch) is still anteroposterior; and thick barium milk passes as quickly as in the normal individual. The scars in the pharynx are almost entirely anesthetic.

Points of Physiologic Interest.—These, as I have drawn them from my experiences, are:

1. A paralysis of the second stage of deglutition, coming on about five or ten minutes after the contact of the corrosive with the mucosa of the throat.

2. Edema of the epiglottis and false vocal cords, coming on about twenty minutes after the accident, which caused severe attacks of coughing, choking and dyspnea. These attacks occurred from five to ten minutes apart and were benefited by the use of a "croup tent."

1. Dr. R. C. Brown, Presbyterian Hospital, Chicago.

3. The formation of a very viscous mucus, difficult to remove from the mouth and throat, was not decreased noticeably in quantity by atropin.

4. A lesion of the epiglottis (the loss of the apical one third) and some edema and excoriation of the false vocal cords, associated with paralysis of the second stage of deglutition, made possible the passage of liquids, foods and saliva into the trachea when an attempt to swallow was made.

5. It was found, as is the case in postdiphtheric paralysis, that deglutition was facilitated by lying on the abdomen and hanging the head over the bed. Frequently the superior pharyngeal constrictor and associated muscles failed to function, and the food or drink would be expelled from the nose.

6. It was found that deglutition was also facilitated, if a voluntary effort was made to force the food through the pharynx by increasing the force of the latter part of the first stage of deglutition and protruding the chin forward.

7. Excitement, nervousness and fatigue made and still make swallowing more difficult and tend to induce spasm at the stricture.

8. After the ability to swallow returned, the stricture could be definitely localized by the sensation produced by the passage of a bolus of food. The bolus caused no sensation until it reached the stricture, when a definite sensation of pressure was experienced.

9. The pain sensation and after image are all rather definitely localized.

10. Marked peristalsis of the upper portion of the esophagus, when caused by some food lodging at the site of the stricture, produced sensations, beginning at the level of the thyroid cartilage and traveling downward, that are analogus to swallowing a very large bolus of food.

PALLIATIVE CONTROL OF THE GASTRIC CRISES OF TABETIC NEUROSYPHILIS

BY THE RECTAL ADMINISTRATION OF CHLORAL HYDRATE AND SODIUM BROMID

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The helplessness of the physician and the abject misery of the patient during the gastric crisis of tabes dorsalis is most discouraging. The vomiting is central in origin, and the administration of cracked ice, carbonated waters, and so forth, has, therefore, little or no effect. It is too severe and continuous for the use of any sedative by mouth. Under such circumstances the hard pressed physician turns perforce to morphin, which in large doses controls both the pain and the vomiting. Often morphin is first employed by the attending physician under the misconception that gallstone colic or some similar organic and definitely removable cause underlies the symptoms. It may be necessary to use the drug a number of times before the true nature of the trouble is brought to light, and by that time the morphin habit is too often well established. The combination of morphinism and the crises of tabes dorsalis is one of the most unmanageable in the sphere of therapeutics, and may end fatally, whereas the prevention of the addiction in the first place might have saved the patient. The chronic nausea which fills the gaps between the crises of an addict removes the chance for recuperation between attacks on which his salvation by treatment for syphilis depends.

We have experimented with many drugs, using different methods of administration, in the effort to devise an improvement on the morphin hypodermic for the relief of the patient. The most successful attempt has been the administration of large doses of chloral hydrate and sodium bromid by rectum. Since we have used doses large enough, and learned the safe intervals of administration of this combination, we have achieved results at least as good as those with morphin in the majority of cases, and the grave risk of developing a morphin addiction in addition to the original trouble has been avoided.

METHOD OF ADMINISTRATION

An aqueous solution of chloral hydrate and sodium bromid is prepared so that one-half ounce (15 c.c.) of the fluid contains 40 grains (2.6 gm.) of each drug. The patient's hips are elevated by a pillow, and the solution is allowed to flow slowly under gravity pressure through a catheter introduced 15 cm. (6 inches) into the rectum. The patient is instructed to retain the injection. The room is then darkened and the patient kept quiet in bed. For large persons, above 150 pounds (68 kg.), as high as 60 grains (3.9 gm.) of each drug at one dose can be given. We have found it most satisfactory to give the injection at about bedtime, when possible, although this will depend on the need of the patient.

TYPE OF PATIENTS

The patients in this series were all definitely proved syphilitics with gastric crises. Nearly all the cases were extremely obstinate and severe; the patients had been tried on ambulatory treatment and finally had to be hospitalized. Four patients were morphin addicts. All had used, without relief, the simpler palliative remedies, such as carbonated water, cracked ice, sodium bicarbonate, and rest in bed, before the rectal administration of the chloral-bromid mixture was resorted to.

RESULTS

Our observations were made on twelve patients seen since Jan. 1, 1921. Each patient received from one to fifteen injections by rectum; the average number was four. In all, forty-nine injections were given, and definite relief was obtained in 76 per cent. of the forty-nine administrations. In two instances the injection was partially expelled, and in the remaining instances the hospital records noted "very little relief" or "not much improved." The administration of the chloral and bromid gives relief from both pain and vomiting for from two to five hours. In many instances, when the injections were given at 9 p. m., patients rested comfortably or slept most of the night. This is certainly all that could be expected from the usual hypodermic dose of morphin. In no case have we noted any deleterious effect from the drug, although occasionally injections have been repeated as often as three times in twenty-four hours. In no instance has the development of an appreciable immunity to these drugs been noted. The last injection, therefore, is apparently as effective as the first. When the attack is finally over, the patient is left without a handicap, to begin the period of recuperation on which his ability to weather the disease depends.

Gastric lavage was used in two cases and seems to be a valuable adjunct to treatment, especially if there is evidence of gastric distention. Codein administered in doses as high as 1.5 grains (0.1 gm.) has been disappointing. In four instances a paravertebral injection of the splanchnic nerves with 0.5 per cent. procain and a few minims of epinephrin was performed, but with doubtful results. The latter method also requires technical experience, which is not always available.

DESENSITIZATION OF HAY-FEVER PATIENTS BY SPECIFIC LOCAL APPLICATIONS *

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A short time ago, with Baldwin,[1] I reported observations on the local exhaustion of cutaneous reactions in patients with hay-fever or asthma. It was found that, by repeated applications to the same skin area, either by the scratch method or by intracutaneous injection, of the substance to which the individual is hypersensitive, the reactivity may be locally abolished. This exhaustion of reactivity was repeatedly accomplished with horse serum, egg albumin, feather extracts, certain food proteins and pollen extracts. There seemed to be a considerable degree of specificity in the exhaustion, because, in a few individuals giving positive reactions to more than one substance, the reactivity to one protein could be locally abolished with little or no diminution of the reaction at that site to the other proteins to which the individual was hypersensitive. Furthermore, it was observed that the exhaustion was more readily effected with substances known to possess a higher degree of antigenic property, such as horse serum and egg albumin, than with substances having relatively poor or questionable antigenic properties, such as pollen and feather extracts.

LOCAL DESENSITIZATION

With these observations as a point of departure, I have attempted to apply this principle of local desensitization to the treatment of hay-fever.

Perhaps a word should be said about using the term "desensitization" in this connection. The word implies, of course, that the hypersensitiveness in question is a manifestation of anaphylaxis. At present it seems that the evidence either placing hay-fever and asthma in, or excluding them from, the category of anaphylactic phenomena is incomplete, but there is an almost universal custom of using the terms anaphylaxis, sensitization and desensitization in referring to these manifestations of human hypersensitiveness. Coca [2] has objected to the uncritical use of the terminology of anaphylaxis for any of the manifestations of hypersensitiveness in man, and one cannot fail to appreciate the force of his contentions. However, until there is sufficient evidence really to settle the question one way or the other, the use of the term "desensitization," with the foregoing reservation, seems most convenient and justifiable.

The literature contains several studies bearing on the principle involved in the treatment of hay-fever by local applications. First Dserzgowsky [3] and later Blumenau,[4] by applications of diphtheria toxin to the mucosa of the nose, throat and trachea, produced an active immunity which they believed to be in part general and in part local. However, it is not clear from their work that a local immunity was produced. It is possible to interpret their results as due entirely to a general active immunity in which the nose and throat participated. It is clear, nevertheless, from their experiments as well as from the earlier observations of Ehrlich [5] on ricin and abrin immunization, that an active immunity may be produced by introducing the antigen into the upper air passages or the alimentary tract.

Sewall and Powell [6] demonstrated that, by varying the dosage, guinea-pigs may be either sensitized or rendered refractory to horse serum by intranasal instillation. Here, again, it is not clear whether a specific local desensitization was produced or whether the results were due to a refractory condition of the entire animal. Recently, Besredka [7] has studied the immunity produced when the oral and intratracheal routes are employed for administration of the antigen. With organisms of the typhoid-dysentery group he obtained results after oral administration which he interprets as demonstrating the production of a local immunity in the intestinal mucosa. Similar results were obtained by intratracheal injection of diphtheria bacilli. It should be noted, however, that Zingher [8] has been unsuccessful in an attempt to confirm Besredka's results.

RESULTS IN THIRTY-EIGHT CASES

The group of patients on whom this brief report is based consisted of thirty-eight individuals with seasonal hay-fever; many of them also had asthma during the hay-fever season, but in all there was reasonably certain evidence (skin reactions and limitation of symptoms to the pollen seasons) that the symptoms were dependent on hypersensitiveness to pollens. A number of patients have not been included in the report for either one or the other of two reasons: Either the treatment was too incomplete to furnish an adequate test of the method employed, or no reply to follow-up letters has been received to date.

All of the patients included received what we have arbitrarily called a complete or nearly complete course of preseasonal (prophylactic) treatment. The pollen extracts were thus prepared: The pollen-containing portion of the plant was ground up in either a mortar or a meat chopping machine, and the pollen mechanically separated from the rest of the plant with carbon tetrachlorid. The pollen was then ground in an agate mortar with powdered glass until few or no intact pollen granules were left, and then the mass of powdered glass and pollen material was extracted with hundredth normal sodium hydroxid, first in the shaker for an hour, then in the icebox overnight, and finally in the shaker for another hour. The extract was then filtered through paper and a Berkefeld or Mandler candle.

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Five-tenths per cent. phenol (carbolic acid) was added as a preservative. Extracts prepared in this way have contained from 75 to 150 mg. of nitrogen per hundred cubic centimeters. We have standardized the extracts by content in Kjeldahl nitrogen, a method first suggested by Cooke and Vander Veer.[9] For routine use we have made up four strengths containing, respectively, 0.01, 0.1, 1.0 and 10.0 mg. of nitrogen per hundred cubic centimeters.

With a few patients, owing to extreme hypersensitiveness, it was necessary to start with a solution containing only 0.001 mg. of nitrogen; a few were finally given a solution containing 50 mg. per hundred cubic centimeters, but the majority were started on the solution containing 0.01 mg. and carried through to the solution containing 10 mg. per hundred cubic centimeters.

In the group of thirty-eight patients there were thirty-five with late hay-fever, all of whom were treated with ragweed extract, and three with early hay-fever, treated with timothy extract.

In order to determine the effect of repeated local application of pollen extracts to the nasal mucosa, we divided the thirty-eight patients into three groups. Eight were treated by subcutaneous injections alone; ten were treated by local applications alone, and twenty by both subcutaneous injections and local applications. The routine method was to give the injections twice a week, beginning with the weakest of the four stock solutions, gradually increasing the amount and then the strength of the solution, until several injections of from 0.5 to 0.7 c.c. of the solution containing 10 mg. of nitrogen per hundred cubic centimeters had been given. For the local applications, the patient was given an ordinary nasal atomizer and instructed to spray the nasal passages night and morning, beginning with the weakest solution. If no symptoms were produced by free spraying with this solution, the next stronger extract was substituted and so on, until the solution containing 10 mg. of nitrogen per hundred cubic centimeters could be tolerated. It was soon clear that the reactivity of the nasal mucosa could be grealy diminished by the spray alone. Patients who, at the beginning, experienced symptoms of hay-fever after spraying the nasal passages with the weakest of the four solutions soon showed unmistakable evidence of increasing tolerance. In several instances, patients were eventually able, after from eight to ten weeks of spraying, to use freely a solution 1,000 times stronger than the one which at the onset had caused symptoms when used in very small amounts. There was, however, considerable individual variation in the rapidity with which the patients could increase the amount and strength of the solution used in the spray. The same variation in the rapidity with which tolerance is acquired has often been noted during the course of prophylactic injections. With all but two of the patients, the injections and spray were stopped a few days before the date when symptoms were due to begin. None of the nonspecific methods for alleviating the symptoms were employed during the season of pollination.

RESULTS OF TREATMENT

In estimating the result of treatment, we have found it difficult to assign, as some have done, a numerical value to the amount of relief obtained. We have, therefore, recorded the results of treatment under four descriptive terms: (*a*) complete relief; (*b*) almost complete relief; (*c*) considerable relief, and (*d*) no relief.

By "complete relief" is meant that no symptoms whatever were noted. "Almost complete relief" has been used for the patients who have had only trivial symptoms for a few days or a week, and at no time suffered distressing symptoms. "Considerable relief" means that the duration and intensity of the symptoms were clearly lessened in comparison with the patient's experience in previous years. "No relief" has been used for the patients in whom the symptoms were unaffected by the treatment, or relieved only to a degree that fell short of being properly called "considerable." Patients who have had both hay-fever and asthma during the pollen season may get complete relief from asthma, and little or no relief from hay-fever. Such patients have not been recorded as having obtained more than considerable relief. As there was little difference in the age, sex, severity or duration of symptoms in the individuals of the three groups treated differently, nothing will be gained by giving these data. The results of the thirty-eight patients who received a complete or almost complete course of prophylactic treatment are given in the accompanying table.

RESULTS OF PROPHYLACTIC TREATMENT IN THIRTY-EIGHT CASES

	Injections Alone	Spray Alone	Spray and Injections
Complete relief	0	1	3
Almost complete relief	3	2	9
Considerable relief	4	6	6
No relief	1	1	2
Total	8	10	20

From these results, and from the observations mentioned above that patients become tolerant of increasing strengths of the pollen extracts administered in the spray alone, one may conclude that it is quite possible to alter the reactivity of the nasal and pharyngeal mucosa of pollen-sensitive persons by local application of pollen extracts. This desensitization is manifestly quite different quantitatively from the desensitization which may readily be accomplished in anaphylactic animals. Neither by injections nor by local applications, nor by both methods used simultaneously has desensitization been produced in man with the rapidity, completeness or certainty characterizing guinea-pig desensitization. Whether the desensitization of hay-fever patients is also qualitatively different from the phenomenon in animals is not so clear; but, in addition to other evidence, the recent demonstration by Parker [10] that ragweed extract is a true antigen inclines one to view hay-fever desensitization as a saturation phenomenon in which an intracellular antibody-like substance unites with an antigen endowed with relatively low grade antigenic properties.

Whatever be the mechanism of the increased tolerance for the pollen antigen in these hypersensitive individuals, it seems clear that it is not necessary that the antigen be injected into the tissues in order that increased tolerance may be produced. Merely bathing the exposed surfaces of the cells has the same kind of effect as when the antigen is introduced into the tissues.

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One feels inclined to consider this a local desensitization dependent on an alteration in the cells of the nasal mucosa whereby their specific reactivity is markedly diminished. Although such an interpretation of our results is perhaps correct, one is not justified in concluding that a local desensitization apart from a general loss of reactivity has been demonstrated. The pollen extracts used in this work are soluble antigens, and since it has already been shown that a general active immunity may be produced by using the nasal route of administration, it is possible that the pollen antigen was absorbed through the nasal mucosa and produced a general desensitization which included the nose and throat.

It is well known that subcutaneous injections may relieve the symptoms of hay-fever without abolishing or even weakening the skin reaction very much; and hence the fact that the skin reactions of the patients treated with the spray were not perceptibly altered by the treatment does not necessarily mean that the desensitization was purely or even mainly local.

Further observations are necessary in order to determine just how valuable the method of local application of pollen extracts is in the treatment of hay-fever. Our series of patients is too small to justify conclusions as to the practical usefulness of the method and, furthermore, it seems quite probable that the details of the method may be improved; but whatever its value as a practical prophylactic or therapeutic procedure may prove to be, the principle involved is not without importance.

CONCLUSIONS

1. The reactivity of the nasal mucosa of hay-fever patients may be markedly diminished by spraying the nose and throat with the specific pollen antigen.

2. In a series of patients given specific prophylactic treatment by this method, the results compared favorably with those in a series of patients treated by specific subcutaneous injections, but were less satisfactory than when a combination of the two methods was employed.

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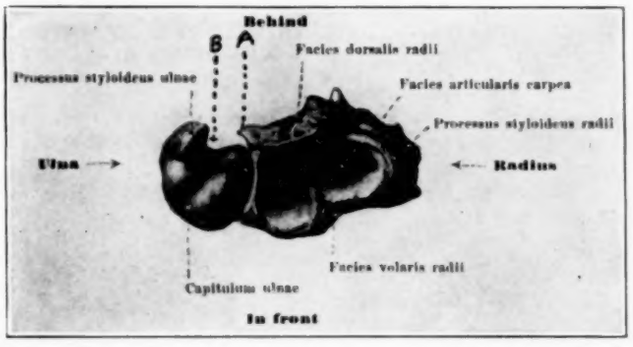

Fig. 3.—View of lower articular surface of right radius and ulna in full pronation. When the radius rotates into full supination, point *A* on radius fits into groove *B* in ulna. When radius is shortened by fracture, the lower end moves up and strikes the bulge in lower end of ulna instead of the groove *B*, making full supination impossible.

Epidemic Encephalitis Mortality.—Deaths from epidemic encephalitis, in 1920, numbered 1,503, according to statistics made public by the Bureau of Census. These figures are based on death certificates issued in the death registration area of the United States. In 1919, the number of deaths from this source was 589, giving mortality rates of 1.7 and 0.7 per hundred thousand population, respectively. With the exception of the state of Delaware, deaths from lethargic encephalitis were reported for every state in the registration area. New York reported the largest number, totaling 364 and showing a mortality rate of 3.5 per hundred thousand population. A comparison of deaths in the city and in rural communities shows that 1,129 of the total 1,505 deaths occurred in the metropolitan communities, while only 376 were recorded from the rural districts of the country. The rate is, respectively, 2.6 and 0.8 per hundred thousand. The white population, with 1,453 deaths from lethargic encephalitis, has a rate of 1.8 per hundred thousand population, while the colored population, with only 52 deaths, has a rate of 0.7.

MECHANICS AND TREATMENT OF FRACTURES OF THE FOREARM*

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Fractures of the forearm probably offer more problems in mechanics than any other fractures in the body, not excepting the femur. There are here two bones which form a pedestal, supporting the hand and having attached to them an intricate system of muscles which control the hand. The arm in itself is of comparatively little use; it is the fact that it controls the motion of the hand that makes it important. The ulna can be considered an extension of the arm downward and the radius an extension of the hand upward, as the ulna articulates with the humerus in a pure hinge joint and is supported by the humerus, tapering down to a smaller diameter at its distal portion than at its base at the elbow. The radius, however, is wider at its distal portion, tapering toward the elbow. The radius is concerned with motions of the hand; the ulna, with motions of the arm. The radius forms an important part of the wrist joint, and the ulna a very small part. The ulna forms a very large part of the elbow joint, and the radius a very small part. These two bones, of course, are joined by the interosseous membrane, the fibers of which run from the ulna to the radius in a slightly upward direction, so that a blow transmitted from the hand to the radius, driving the radius upward, has a direct pull on the ulna also, and, if the bones are fractured, has a tendency to draw the fractured fragments together. Many of the muscles of the forearm have more than one direction of pull, depending on what position the hand occupies. The pronators and supinators have in some cases almost a direct transverse pull on both bones, and, in addition to their rotating action, some of them, as the pronator teres, biceps and brachioradialis, have a flexor action.

Fractures most frequently occur in the lower third of the forearm, because at this point the bones are less well protected by heavy muscles than they are in the upper forearm, and also because the ulna is weakest in the lower portion, and hyperextension or flexion of the hand exerts a direct pull on the lower part of the radius which may cause fractures, as in chauffeurs' or in Colles' fracture.

Considering the lower forearm, then, first we have most commonly the Colles fracture, the mechanism of which is familiar to all: a hyperextension of the hand with a blow directed upward, transmitted directly from the palm of the hand to the lower articular surface of the radius. The lower end of the radius is driven backward and upward, and the upper fragment is driven downward and forward. The upper attachments

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of several illustrations. The complete article appears in the author's reprints.

of the anterior ligaments of the wrist tilt the volar edge of the lower end of the radius backward and upward, changing the angle of the wrist joint from an angulation which runs from the radial side upward toward the ulna and facing slightly forward, to a directly transverse line cut straight across the axis of the two bones and facing the lower articular surface of the radius backward and upward, leaving the typical silver fork deformity.

Fig. 4.—Chauffeurs' fracture: shortening of radius, with anterior displacement of upper end of loose fragment, and downward and forward displacement of lower end of ulna.

There may occur in this fracture something that has been given very little attention in the textbooks and writings on this subject. There is between the radius and ulna, at its lower articulation, a fibrocartilaginous lined joint held together by ligaments. At this point the radius rotates around the ulna. When the lower end of the radius is driven upward, if the ulna is not also fractured, then the ulna, to all intents and purposes, is displaced downward. This throws a strain on the radioulnar ligament and tears it, allowing the ulna to move downward and forward as the lower end of the radius moves upward and backward (Fig. 1). A picture is presented of a prominence on the ulnar and flexor side of the wrist, made by the styloid process and the lower end of the ulna protruding at this point, which also gives the impression of a displacement of the hand toward the radial side (Fig. 2). Looking at the lower ends of the radius and ulna where they articulate, it will be seen that the styloid process projects backward and downward; that there is a notch into which the radius fits when the hand is in supination (Fig. 3). Now, if the radius is driven upward and backward and the ulna downward and forward, the ligaments between the radius and ulna must be injured and the relation between the ulna and radius much disturbed, which explains the inability of patients with Colles' fracture improperly reduced to supinate to full extent. The point *A* of the radius no longer fits into groove *B* of the ulna, but strikes above it and prevents full supination.

This is also true of chauffeurs' fracture, which occurs as a result of a quick blow on the palm of the hand with hyperextension of the wrist, followed sometimes by a complete whirl of the crank striking the radius about 2½ inches (63 mm.) above the wrist. In this case, we have the mechanics of an indirect and direct violence combined. Here the radius is fractured about 2½ inches (63 mm.) above the wrist; the lower fragment is displaced forward at its upper end, as one would expect it to be as a result of a tightening on the anterior ligament of the wrist joint where it is attached to the lower lip of the radius on the flexor side, which acts as a short lever to tip the upper end of the lower fragment forward. The brachioradialis, or supinator longus, now comes into play. This muscle, being attached to the humerus and to the styloid process of the radius, has a tendency to tip the upper end of the lower fragment toward the ulna, making an angulation toward this point. In Figure 1 it will be seen that instead of the radio-ulnar ligament being ruptured, the whole surface of the radius where it articulates with the ulna has been torn out and remains in place on the ulna. In this case perfect apposition can be had and maintained because the bony surface will reunite, leaving no deformity at the radio-ulnar joint. However, this is not the case in most injuries of this type. In most of them it will be found that the radio-ulnar ligament is torn instead of the bone surface of the radius being torn out with the joint intact. If these ligaments are not approximated and normal anatomic relations reestablished, there must surely result some interference with pronation and supination, and this joint should not be overlooked in any case involving shortening of the radius with no fracture of the ulna. It is often overlooked on account of the normal overlap of the radius upon the ulna, making it difficult to gage any injury to this joint. If a roentgenogram could be taken at right angles to the long axis of the forearm, it is my opinion that many more injuries and separations at this joint would be found than are found under present conditions.

Fractures of one or both bones of the forearm above the wrist are affected by all the muscles of the forearm so far as longitudual traction is concerned, but it is usually not overriding that gives us difficulty in fractures of this type. As has already been stated, the value of the forearm lies in the fact that it controls the motions of the hand, the most important of which are pronation and supination. The ulna is a fixed quantity; the radius rotates around the ulna, and when the hand is in full pronation lies immediately over it, crossing it at about the middle. In semipronation and full supination, the bones are at their maximum distance apart and the difference in space between the bones in supination and semipronation is negligible.

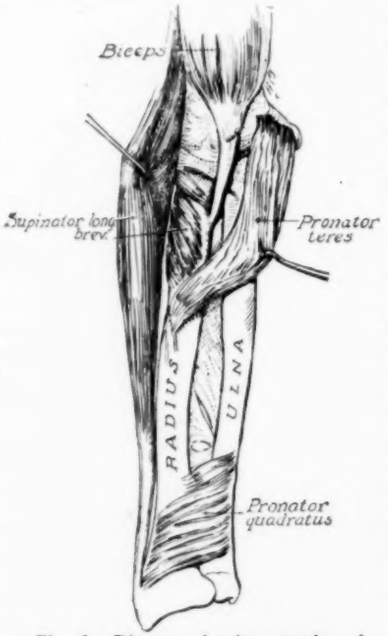

Fig. 5.—Diagram showing muscles of forearm exerting rotating and lateral displacing influences on fractures of forearm.

Fractures of the forearm can, therefore, be treated according to their location, either in semipronation or in full supination. There are a number of displacements which are common. The lower fragments may be displaced anteriorly or posteriorly or laterally, or

they may be displaced in a position of rotation. The ends of the fragments are sometimes caught in the muscles, but there is one displacement which never occurs, and that is wide separation of the ends of the fragments, as the interosseous membrane holds them in relatively close approximation. In considering fractures of the forearm, they must be classified according to their relation to the insertion of the pronator teres, which is about the middle of the forearm. Fractures below this point, as one can see from Figure 5, would occur between the pronator quadratus and the pronator teres. The muscular action here is for the lower fragments to be drawn together by the action of the pronator quadratus, which runs practically transversely between the radius and the ulna at their lower ends, assisted by the supinator longus, or brachioradialis, which is inserted at the styloid process and has a tendency to tip the radius toward the ulna. The supinators, which are the strongest group, consisting of the biceps and the supinator brevis, have a tendency to supinate the upper fragment, but are opposed in this by the pronator teres, which also has a tendency to pull the lower end of the upper fragment toward the ulna and flex it. The biceps also flexes the upper fragment. Therefore, we have a tendency in this fracture to a scissors deformity, with a pronation of the lower fragment and supination of the upper fragment.

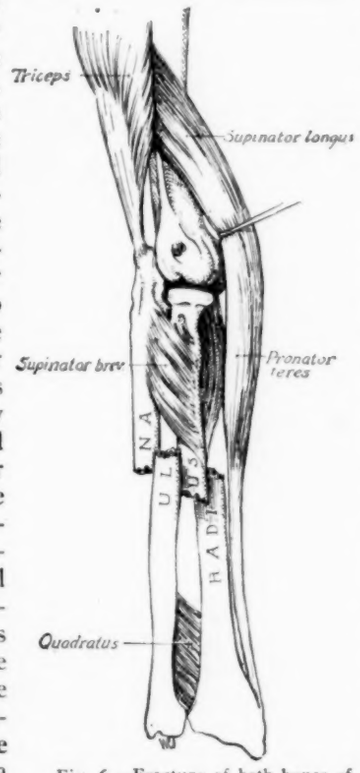

Fig. 6.—Fracture of both bones of forearm between pronator teres and supinator brevis, with both lateral displacement and rotation.

The fracture above the pronator teres and below the supinator brevis and biceps is, in my opinion, impossible to treat successfully by the ordinary methods used in the treatment of fractures of the forearm. It will be seen by reference to Figures 6 and 7 that here both pronators are attached to the lower fragment. The pronator quadratus pulls the upper end of the lower fragments together, the supinator longus aiding in this action. The pronator teres rotates the lower fragment into pronation and also pulls it against the ulna, the upper fragment controlled by the biceps, which is a strong supinator, and the supinator brevis rotating the upper fragment into full supination and flexing it so that the upper fragment is practically always anterior to the lower fragment unless it is caught in the muscles as a result of violence, in which case it will be impossible to reduce without open operation.

There is another consideration of a fracture at or near this point, which is not commonly taken into consideration, and that is the entrance of the nutrient artery in the immediate vicinity, in both the radius and the ulna (Fig. 7). This, of course, leads to a considerable hemorrhage, which forms an organized clot and is a first class bridgework on which bone deposit can be made, so that the fragments may eventually be joined by a solid bony callus. Even with separation of the fragments, this occurs not infrequently. It will be plainly seen that fracture at this point cannot be controlled by the ordinary methods of reducing and holding in reduction fractured bones, as there are too many cross pulls displacing the bones toward each other and rotating them to be overcome by any external mechanical means, As the loss of pronation and supination materially cripples the use of the hand, the danger in operation by competent surgery is far outbalanced by the danger of a permanent loss of use of the member.

In fractures at this point also, which are practically always produced by direct violence, there may be a complete rotation of both fragments, as in Figures 8 and 9, with overlapping. Once callus is formed with a deformity of the type shown, it is practically impossible ever to attain a completely useful hand and forearm, because the surgical procedure necessary to break up the synosteosis and replace the fragments in their normal relation requires so much traumatism to the attachments of the muscles and the interosseous membrane, with danger of injuring the posterior and anterior interosseous nerves, that it is almost useless to attempt.

Fractures above the middle of the forearm practically always occur as a result of direct violence on the ulna, as when the arm is thrown up to ward off a blow. In this case the lower end of the upper fragment attached to the olecranon may be driven forward, or the upper end of the lower fragment may be driven forward. In either case, however, the force is carried through, and often an anterior displacement of the head of the radius occurs; the orbicular ligament is torn, and the head of the radius is displaced upward toward the head of the humerus (Fig. 10).

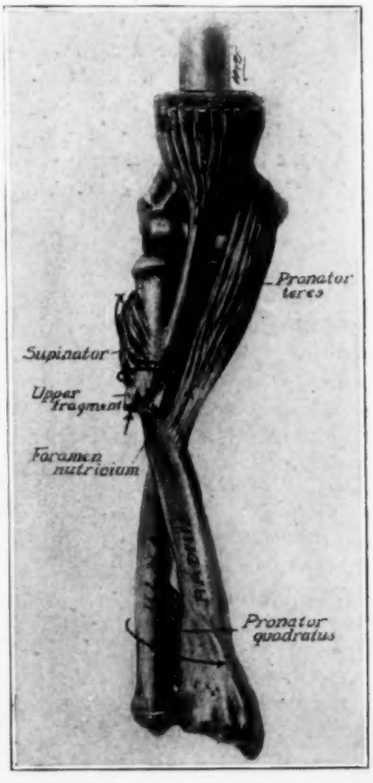

Fig. 7.—Fracture of radius between pronators and supinators, showing pull of various displacing muscles. Pronation of loose fragment with supination of upper fragment. This should always be set in full supination, because the upper fragment cannot be controlled.

The fracture of the ulna is easily recognized, but the dislocation of the radius may be entirely overlooked, as it frequently is. The fracture in the ulna usually occurs where the head of this bone, which is narrowed down by the bicipital hollow, is gouged out by nature to allow free passage of the tendon of the biceps to its insertion in the radius. This is the narrowest and weakest part of the ulna in its upper end, and is very close to the elbow joint (Fig. 10). In this fracture there is not only the displacement of the fragments, but

also a loss of carrying angle on account of shortening of the ulna. Because of its hinged joint at the elbow, the ulna holds the forearm in its normal relation to the humerus and maintains the normal carrying angle. When the ulna is broken near the elbow and shortened, the radius does not maintain this angle (Fig. 11). The loss of the carrying angle is a serious handicap to the working man, and if, in addition, it is not observed that the head of the radius has been carried into anterior displacement, he will lose both the carrying angle and the power of flexion of the elbow beyond a right angle.

Fig. 8.—Fracture of radius and ulna at middle, with rotation and lateral displacement.

TREATMENT

The treatment of these conditions, of course, can be divided into two classes, or possibly three: nonoperative ambulatory, nonoperative recumbent, and the operative treatment.

It has been the custom, because arms are not necessary in walking, to allow a patient to go about during the course of treatment of fractures of the forearms. It is because of our reluctance in putting a patient to bed with fracture of the forearm, as we do in fractures of the lower limbs, that I believe many deformities occur. Traction is an essential part of treatment of fractures of any kind. The muscles are in a constant state of tone, which means that they are working twenty-four hours a day to reach a point at which there is normal tension put upon them. If there is no bony approximation of the ends of fragments, or at least not enough rigidity to keep these muscles under their normal stretch, they will continue to contract until a point of resistance is reached which counterbalances their tone. It is impossible to apply traction to fractures of the forearm with a patient out of bed. Also, the ambulatory patient carries his arm in a sling of one kind or another. This may be a sling around the wrist with two board splints anterior and posterior, properly applied to fractures of both bones. Under this treatment a tendency toward sagging of the bones at the point of fracture occurs, merely as a result of gravity.

Cases of perfectly transverse fractures of one bone of the forearm, it is true, can be treated as ambulatory; but in fractures of both bones of the forearm, I believe that the patient should always be confined to bed and be under constant observation of the attending surgeon. They should be confined to bed because this is the only method by which one can exert constant traction in a fixed direction, which is the axis of the bones, and maintain this traction for sufficient length of time to warrant the expectancy of a good result.

We have found that a suspension of the forearm, perpendicular position, with the elbow flexed at right angles, is the most satisfactory position. In this way the biceps is relaxed, and its supinating and flexing effect on the upper fragment of the radius is eliminated. The weight of the upper arm acts as counterextension, and in this way traction is put on the muscles which run parallel to the long axis of the bones, to prevent the fragments from overlapping. There is no tendency toward sagging; the ligaments of the wrist are pulled tight to maintain the lower fragment, which has a tendency to put tension on the lower ends of the lower fragments and maintain them in their normal line. Pronation and supination can be controlled as illustrated in Figure 12 *A*.

If the weight of the upper arm is not sufficient to drag the fractured fragments into line, a piece of ordinary plumbers' lead pipe can be hammered flat and bent in the shape of the arm just above the elbow, slightly padded and bent around the arm, fitting closely to it and adding enough weight to meet the requirements of the situation. This is a comfortable means of applying weight to the arm, and at the same time allows the patient freedom of motion in bed. There are several requirements in applying extension to the forearm:

1. The extension must be applied in such a way that it will not pinch the radius and ulna together.
2. All of the extension must be exerted on one side of the fracture, and all counterextension on the other side. In other words, the adhesive plaster, if used, must not overlap the fracture.
3. The fingers and thumb must be free at all times so that the patient can move them voluntarily, that adhesions between the tendons and tendon sheaths may not take place.
4. Pronation and supination should be under the control of the surgeon and not under the control of the patient.
5. Extension should be applied in such a way that the patient can move the hand freely in bed without changing the direction of pull, within, of course, certain reasonable limits. This can be accomplished by the use of two laths cut in length of about 12 inches (30 cm.) Narrow strips of adhesive plaster are run obliquely from the ulnar side toward the base of the thumb, and vice versa, both on the flexor and on the extensor surfaces. The distal ends of these adhesive plaster straps are wrapped around the lath on the flexor surface and one on the extensor surface. The strips should exert their pull just distal to the wrist on the proximal ends of the metacarpals and around the carpals, and on the extreme

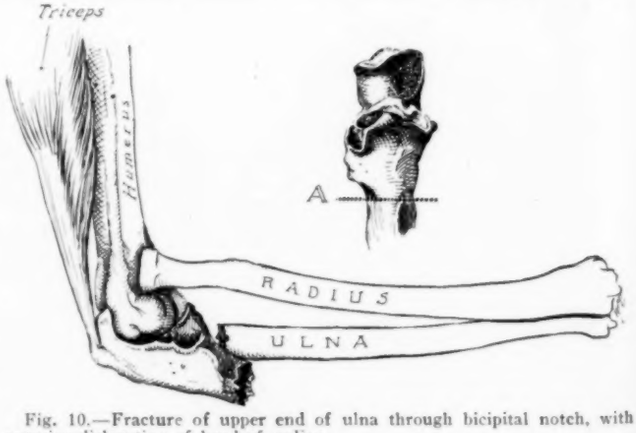

Fig. 10.—Fracture of upper end of ulna through bicipital notch, with anterior dislocation of head of radius.

distal ends of the radius and ulna. They will run almost at an angle of 45 degrees from the lath, both toward the ulna and the radius and on the flexor and extensor surfaces. The laths are placed at right angles to the long axis of the arm and on a level with the metacarpophalangeal joints. This allows the fingers to project, and daily motion of the fingers should be performed, which eliminates the possibility of adhesions and facilitates complete recovery. The arm is now suspended by the attachment of ropes to each end of each lath, and these ropes in turn are attached to weights and pulleys, the weight sufficient to balance exactly the weight of the arm, which pulls directly on the upper ends of the upper fragments. Semipronation or supination can be established by attaching to the laths a rope which will hold the hand in the position desired (Fig. 12 *B*). The bones are held anteroposteriorly by padded board splints, which are wider than the arm and which are held in place not by bandage, but broad strips of adhesive plaster at both ends (Fig. 12 *C*). No circular dressing should be used under any circumstances, since the whole tendency of the bones is to approximate at the fractured ends and consequently form a synosteosis. Boards tend to force the muscles into the space between the bones, and this aids in holding them apart. Circular casts are not applicable in any way to fractures of the forearm, and should not be used. If anteroposterior board splints are used and the patient is ambulatory, then provision should be made for supporting the fracture beneath the ulna so that there can be no downward ulnar angulation of both fragments from the pull of gravity at the point of fracture. These fractures should always be set under a fluoroscope. Extension should not be made by the hands of the surgeon; the patient should be held on the table with a sheet passed between the arm and the ribs on the affected side, and the patient firmly tied to the opposite side of the table on which he lies. A loop of strong muslin bandage should then be passed around the patient's wrist and over the operator's shoulder (Fig. 13). The operator now can throw the weight of his body firmly and strongly against the pull of the patient's muscles; and, with both hands free to manipulate under the fluoroscope, is in position to force the bones back into proper alinement and perform pronation and supination passively; while doing this, his motions are not jerky, his hands do not slip, and consequently he is able to restore the bones to their normal anatomic position in a much more skilful manner than he ordinarily would be. This is a method I have used for a number of years and found extremely satisfactory.

Fig. 11.—Carrying angle which is lost when ulna is fractured at upper end.

In operative treatment of fractures in this region, the site of election for incisions is, of course, lateral, either on the radial or the ulnar side, or both, as the case may be. It has been my painful experience to reoperate after incisions have been made through the flexor or extensor surface. This, of course, leads to adhesions around the flexor or extensor tendons, and gives serious disability when no disability should have occurred. It would seem perfectly obvious that the exposed areas on the sides of the arm would be selected in any case, but this has not been true always, and the point is mentioned in passing merely because it has been brought to our attention forcibly on several occasions.

The lateral incision involves no destruction or interference with blood vessels, nerves or arteries, and does not interfere materially with the attachment of muscles.

Absorbable material should always be used. The day of steel plate and wire has passed. Ivory is our preference because of its nonirritating qualities and its strength, which firmly fixes the fragments in position and holds them there without fail until union has taken place, and then is finally absorbed without irritation to the soft parts. Beef bone screws and plates have been used and are satisfactory in many cases. Their strength is only about one-third that of ivory, and consequently firmer fixation is necessary for their external support. They are absorbed more quickly than ivory, but one always has the feeling that they may break. String or wire in the form of catgut, kangaroo tendon, silver or steel wire may hold in some cases, but it has been my experience that this form of mechanical union cannot be trusted, and if an open procedure is to be admitted, then that procedure should so fix the bones that there should be no fear in the heart of the operator that there will be any recurrence of deformity.

Finally, the fingers and hand should be moved regularly and systematically at the earliest possible opportunity. Fingers should never be included in fixation dressings, and daily massage and motions of the fingers should be instituted from the day of fracture until final recovery. The delicate tendon sheaths of the forearm and hand are easily injured and easily become adherent to the tendons. There will be a cer-

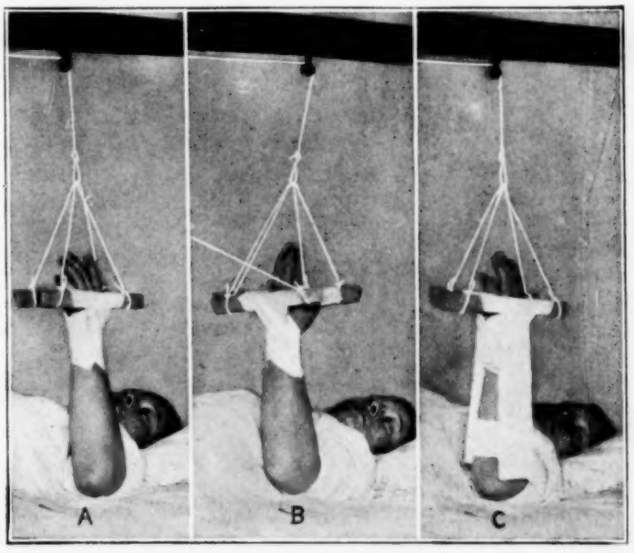

Fig. 12.—*A*, adhesive plaster applied distal to fracture in form of cuff and supported by laths at level of metacarpophalangeal joints for extension of arm and free use of fingers; *B*, rope attached to laths to hold arm in any degree of pronation or supination; *C*, anterior posterior board splints applied with board strips of adhesive plaster to aid in holding fragments.

tain amount of cicatrization at the point of fracture at best, and this can be kept at the minimum by keeping the muscles in motion at regular intervals, which will also assist in keeping the circulation active and aid nature in repairing the damage that has been done.

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ANATOMIC STUDY OF INJECTION OF SECOND AND THIRD DIVISIONS OF TRIGEMINAL NERVE*

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Of recent years, with the great advances made in the use of local anesthesia, injections into the second and third divisions of the nervus trigeminus have become a common procedure. Used primarily almost only for the relief of trigeminal neuralgia, the present indications for blocking these nerves include many dental and surgical manipulations on the face and jaws in which the use of a general anesthetic is inadvisable. The descriptions in the literature which various writers have given of the technic of injecting these two divisions of the fifth nerve may seem precise, when read, but are disappointing in their practical application. That this must be so is readily appreciated after any experience in the dissecting room. The skull varies in different individuals, so much so that the establishment of a precise technic is difficult. It is for this reason that it cannot be too emphatically stated that no one should attempt these deep alcoholic injections without sufficient practice on the cadaver to impress him with the difficulties and dangers to be encountered and avoided.

Fig. 1.—Injecting third division of fifth nerve from 2 centimeter mark: method of measuring angle (110 degrees) in vertical plane with protractor.

Any attempt to reach a nerve trunk lying deep beneath the skin, and emerging from bony orifices in the skull, requires definite landmarks and angles as guides to the approach. In this clinic there has recently been developed an instrument called a zygometer which helps in great measure to determine accurately the point on the face at which the needle should be introduced to reach a particular nerve trunk. Using this instrument to standardize the points of insertion of the needle through the skin, we have worked out, in a series of cases in the dissecting room, the angles in the horizontal and vertical plane through which the needle must pass from this fixed surface point to enter the nerve trunk. In the case of the second division of the trigeminus, which is the more difficult of the two branches to inject, three points of approach were used, and the angles taken by the needle in penetrating the nerve were ascertained. For the third division, owing to the relative ease of injecting it, only one fixed point was employed, and its corresponding angles were determined.

TECHNIC

The calvarium was removed from every specimen, and the dura over the ganglion and foramina on both sides dissected away. This was found necessary so that the actual penetration of the nerve trunk by the needle point might be accurately ascertained. Penetration was admitted only when a methyl blue solution injected into the nerve passed up the sheath sufficiently far to be seen from within the skull. Two prominent landmarks were selected on the cheek, the external auditory meatus and the masseteric border of the malar bone. The zygometer was applied with the button in the external ear and the lower edge of the lowermost of the two parallel bars on a level with the masseteric edge of the malar bone. Thus, the lower arm of the zygometer follows roughly the inferior edge of the zygoma.

Subzygomatic Injection of Maxillary Division from the 3.5 Centimeter Mark.—The fixed point through which the first series of angles was determined was situated at the 3.5 centimeter mark, anterior to the ear, along the lower bar of the zygometer. This approach is subzygomatic and corresponds closely to the point of insertion used by Levy and Baudouin.[1] In our series of 162 injections in eighty-five cases studied it was found impossible to reach the nerve by any maneuver from this position in four cases, three times on the right side and once on the left, although in every case of failure on one side the corresponding nerve on the opposite side could be reached. In nineteen of the cases it was found necessary to open the lower jaw to avoid impinging upon the coronoid process. In thirteen of these nineteen cases, this occurred on both sides. The average angles determined in the 162 injections on eighty-five cadavers was 98.5 degrees in the horizontal and 115.5 in the vertical plane. The angle at which the shaft of the needle entered the skin was measured from the malar bone posteriorly (before backward) for the horizontal plane, and from the vertex of the skull downward (above downward) roughly perpendicular to the zygoma for the vertical plane. A protractor was used in computing the angles. For the vertical angle the straight edge was so placed, flush along the surface of the vertical sliding bar of the zygometer, that the shaft of the needle passed through its midpoint, and the external or free tip of the needle registered the angle; while for the horizontal angle the surface of the lower arm of the zygometer was used as a base, and the midpoint of the straight edge of the protractor approximated to the needle shaft. With these two flat surfaces as bases from which to measure, the difficulties

* From the Clinic of Dr. C. H. Frazier, University Hospital.

1. Levy and Baudouin: Presse méd., Feb. 17, 1906.

in accurate estimation of the angles arising from the curves in the contour of the face were in great measure overcome. In spite of these efforts to establish a uniform procedure it was found that in only fifty-three of the eighty-one cases in which both sides were measured did the angles in corresponding planes on right and left agree within a margin of error of 5 degrees. In the other twenty-eight cases, twenty-one varied within 10 degrees and the remaining seven showed a discrepancy of from 10 to 20 degrees. The error seemed as great in one plane as in the other. This variation is an evidence of how markedly the two sides of the skull may differ. The depth at which the nerve was reached varied between 5 and 5.5 cm. from the surface. We believe that a penetration greater than 5.75 cm. would be attended with considerable risk of damaging important structures through the passage of the needle point into the posterior part of the orbit or nose.

To inject the supramaxillary nerve by this method, the needle is inserted at the 3.5 cm. mark on the lower border of the zygometer. The point of the needle should be directed inward at an angle of 98.5 degrees in the horizontal plane and 115 degrees in the vertical plane, as described. The needle passes below the zygoma. At this point it may at once be obstructed by the coronoid process of the mandible. If so, the jaw should be opened, which will allow the needle to pass. The vertical angle should now be increased a trifle, thus deflecting the needle point slightly above the exact point at which the nerve is to be sought. At about 4.5 cm. depth a bony process will be met which is the pterygoid plate. Next the vertical angle should be decreased slightly by lowering the needle point. Then the point is slid forward over the upper anterior edge of the pterygoid plate into the sphenomaxillary fissure, where, at a depth of from 5 to 5.5 cm., the nerve is reached. The sensation of sliding forward into a cleft over the edge of the pterygoid plate is very striking and makes the experienced operator feel sure of a successful injection. In the four cases in our series in which it was impossible to transfix the nerve by this route, the interference seemed to be due to an anterior development of the pterygoid plate, which prevented the needle point from passing anteriorly to it with any chance of hitting the nerve. The dangers in the use of this method are twofold: If the needle point is held too high and inserted more than 5.5 cm., it is possible to enter the orbit through the posterior part of the sphenomaxillary fissure; if held too low and advanced too far, the needle tip will pierce the thin, bony walls of the nasal cavity or pass through the sphenopalatine foramen into the posterior nares.

Fig. 2.—Injecting third division of fifth nerve from 2 centimeter mark: method of measuring angle (90 degrees) with protractor in the horizontal plane.

Subzygomatic Injection of the Maxillary Division from 5 Centimeter Mark.—The second approach to the superior maxillary division of the trigeminus is through a point 5 cm. anterior to the external auditory meatus. The zygometer is in the same position as in the previous method, and the angles the needle shaft forms with the skin are measured in the same fashion from above downward and from before backward. In our series of 120 injections on sixty cadavers, the average for the horizontal angle was 87 degrees and for the vertical angle, 138 degrees. There was no variation between the angles at which the nerve was reached on the right and left side of more than 10 degrees. Fifty-five of the sixty cases showed a variation between the two sides of less than 5 degrees. In every case it was possible to reach the nerve. The point of entrance of the needle is so far forward that the instrument must be passed below the malar, which accounts for the larger vertical angle. In general, this is the route used in the intra-oral method advocated by Schlosser [2] and Ostwald,[3] this method being an extra-oral modification of their technic.

In the dissecting room it was our practice to stand behind the subject's head during this procedure. The little finger of the hand opposite the side being injected is inserted in the mouth, pressing up into the angle bounded posteriorly by the coronoid process, laterally by the malar and internally by the superior maxillary bone. The anterior edge of the vertical movable bar of the zygometer is placed on the 5 cm. mark on the upper and lower arms. If the shaft of the needle be held roughly in line with this anterior edge from behind downward and forward, a horizontal angle of about 95 degrees with the skin surface is produced. The wide vertical angle which the needle must take to pass under the masseteric border of the malar bone and at the same time avoid penetrating the buccal mucous membrane closely approximates the 135 to 140 degrees necessary to reach the nerve. As the needle is inserted, the finger in the mouth directs the point upward along the lateral wall of the maxillary antrum into the sphenomaxillary fissure and the foramen rotundum. The nerve is reached just after it leaves the foramen. At first the vertical angle should be increased to about 140 or 145 degrees and the needle point directed high so that it first encounters the upper anterior edge of the pterygoid plate. The vertical angle is then decreased to 135 or 140 degrees and the needle point directed slightly forward and downward until it slips anterior to the upper curved edge of the plate into the sphenomaxillary fissure. Here, at a depth of 5.5 cm., the nerve is encountered, lying in a mass of fat and muscle. Once the pterygoid plate has been passed, great care must be taken not to seek too deeply after the nerve. The needle should never penetrate to a depth of more than 6 cm. from the skin surface, for

2. Schlosser: München. med. Wchnschr., April 30, 1897.
3. Ostwald: Presse méd., Dec. 16, 1905.

the needle point may easily be forced upward through the sphenoidal fissure and pierce the optic nerve or the internal carotid artery. While the angles of approach are remarkably uniform, and in the dissecting room the nerve was more certainly and quickly reached by this route than by any other, we cannot recommend its use unreservedly. Once past the pterygoid plate, no bony landmarks may be felt. Reckless probing with the needle point at too great a depth will almost certainly result in damage to vital structures. It is this procedure more than any other which requires practice on the cadaver to insure its safe performance.

Suprazygomatic Injection of Maxillary Division.—The third avenue of approach that we studied is suprazygomatic. With the zygometer in the standard position, the superior border of the zygoma and the temporal border of the malar bone are outlined by palpation. The apex of the angle formed by the junction of these two bones is approximately 3.5 cm. anteriorly on the base line of the zygometer. Using this point for the insertion of our needle in a series of sixty injections in thirty-two cases, the average angle in the horizontal plane is 100 degrees, and in the vertical plane, 87. In two cases on the right and the left side in the same case it was found impossible to reach the nerve trunk by this approach. In twenty-three of the thirty cases the right and the left angles agreed within 5 degrees. The other seven cases right and left conformed within 10 degrees.

The needle is inserted above the zygoma at the 3.5 cm. mark almost perpendicularly in the vertical, and slightly forward in the horizontal plane. The point impinges first on the posterior wall of the maxillary antrum and is carried along this wall and slightly downward to pass under the upper anterior curved edge of the pterygoid plate. By holding close to these two bony landmarks, the nerve is reached at about 4.5 cm. from the surface. If the needle be inserted too far, the lateral wall of the nose may be pierced, although this is not a serious mishap. The needle is at all times well below the level of the optic nerve, and anterior to the larger blood vessels. This, therefore, is a safe precedure, and the angles are fairly constant. But from the number of trials required before the nerve could be reached in many cases, and with total failure in two out of thirty-two, we fear that clinically this method may not be as satisfactory as was hoped.

Injection of the Mandibular Division.—For injection of the mandibular division of the trigeminal nerve, only one approach was considered. Injection of this branch is relatively so simple and satisfactory that no other method is needed. With the zygometer in the standard position, the 2 centimeter mark on the lower bar was selected. This corresponds approximately to the point of election described by Levy and Baudouin. Through this point, 162 injections were made on eighty-one cadavers. The nerve was easily reached in every case. The horizontal angle averaged 91 degrees, and the vertical angle 108 degrees. In fifty-two of the eighty-one cases the angles for injection on the left and right corresponded within 5 degrees, in twenty-six within 10 degrees; in three cases, the variation was more than 10 degrees. In the 3.5 cm. approach to the second division, the angles measured in fifty-three of the eighty-one cases were equal within 5 degrees right and left. In forty of these fifty-three cases in which the second division measurements were in accord on either side, the third division measurements were also closely similar. These figures only go to prove the variability of structures on the opposite sides of the same skull.

The needle is inserted below the zygoma opposite the 2 centimeter mark on the lower bar. The direction is perpendicular to the skin in the horizonal plane, and a little upward in the vertical plane. Once the zygoma is passed, the needle point should be deflected slightly upward to strike the floor of the middle fossa. This bone is followed backward, bearing at the same time somewhat forward to avoid the middle meningeal artery, which passes through the foramen spinosum just posterior to the foramen ovale until, at a depth of 4.5 cm., the nerve is reached. By thus keeping the needle point high, it was possible in every case studied to inject the entire ganglion through the foramen ovale if such a procedure should be deemed necessary. If it does not seem desirable to affect the whole ganglion but only the third division, the needle point should be held a trifle lower. The nerve will then be pierced somewhat beyond its exit through the foramen. If the direction of the needle is accurate, the nerve will always be reached within 5 cm. of the surface. The needle point should never be allowed to penetrate to a greater distance than 5 cm.

SUMMARY

1. In 162 subzygomatic injections of the supramaxillary division of the fifth nerve from the 3.5 centimeter mark:

(*a*) The average angle was 98.5 degrees in the horizontal and 115 degrees in the vertical plane.

(*b*) In 65 per cent. of injections, the angles for the right and left sides corresponded within a margin of error of 5 degrees.

(*c*) In 25 per cent. of the cases there was a variation of 10 degrees in the corresponding angles on the two sides.

(*d*) In 10 per cent. of the cases the variation was between 10 and 20 degrees in the corresponding angles on the right and left.

(*e*) The percentage of failures to reach the nerve was 4.7.

2. In 128 subzygomatic injections from the 5 centimeter mark:

(*a*) The average horizontal angle was 87 degrees and the vertical angle, 138 degrees.

(*b*) In 91 per cent. of the subjects, the corresponding angles on the right and left were equal within a margin of error of 5 degrees.

(*c*) In the remaining 9 per cent., the variation was 10 degrees or less.

(*d*) There were no failures to reach the nerve by this route.

3. In sixty-two suprazygomatic injections from the 3.5 centimeter mark on thirty-two subjects:

(*a*) The average vertical angle was 87 degrees, and the horizontal angle, 100 degrees.

(*b*) In 72 per cent. of the cases, the corresponding angles on the right and the left agreed within 5 degrees.

(*c*) In 22 per cent. of the cases the difference in the corresponding angles, right and left, was 10 degrees.

(*d*) In 6 per cent. of the cases it was impossible to reach the nerve by this route.

4. It was always possible to reach the nerve in every case, right and left, by one of these three methods. In no case were all successful.

5. In 162 subzygomatic injections of the mandibular division of the trigeminus from the 2 centimeter mark:
   (*a*) The average vertical angle was 108 degrees, and the horizontal angle, 91 degrees.
   (*b*) In 62.2 per cent. the corresponding angles on the right and the left agreed within 5 degrees.
   (*c*) In 32.1 per cent. the angles varied within 10 degrees.
   (*d*) In 3.7 per cent. the angles varied more than 10 degrees.
   (*e*) In 75.4 per cent. of the cases in which the corresponding angles of injection by this route agreed within 5 degrees, the angles of injection for the supramaxillary division from the 3.5 centimeter mark by the subzygomatic route also varied less than 5 degrees.
   (*f*) There were no failures to reach the mandibular division by this route.

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CARCINOMA IN LATERAL ABERRANT THYROID GLAND

REPORT OF CASE

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AND
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Aberrant thyroids are probably not as rare as is supposed. The type most commonly reported is situated in the midline, as the result of remnants of

Fig. 1.—Lateral view of tumor.

thyroid tissue left in the course of the thyroglossal duct. Only a few lateral aberrant thyroids have been reported. In 1906, Schrager [1] compiled fourteen cases from the literature and added two cases of his own. Wohl,[2] in 1917, reported a case of lateral aberrant thyroid in a patient of his, and compiled four cases from the literature. A few other cases have been reported. The small number of cases reported might lead to the supposition that lateral aberrant thyroids were extremely rare. We believe that this may be accounted

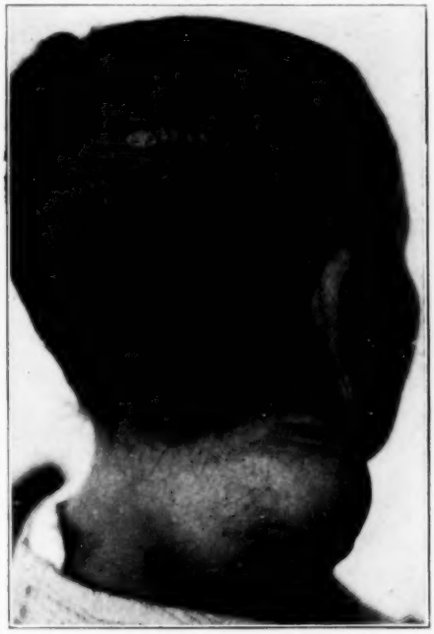

Fig. 2.—Posterolateral view of tumor.

for to a large extent by the great difficulty in diagnosing the condition. Unless some intercurrent pathologic condition presents itself, the lateral aberrant thyroid will pass entirely unrecognized, or be mistaken for a slightly enlarged cervical lymph gland. Even after it has undergone a pathologic change, the true nature cannot be ascertained with any degree of certainty before excision and section of the tissue. In none of the cases reported was a preoperative diagnosis of aberrant thyroid made. Most of the cases were of a cystic nature, and were usually mistaken for branchial cysts. The macroscopic appearance of the tissue at operation is not always characteristic of thyroid tissue, and it is not until the tissue has been subjected to careful microscopic study that a definite diagnosis can be made. Therefore we agree with Schrager that the majority of cases of lateral aberrant thyroids go unrecognized and are not recorded.

Primary malignancy of lateral aberrant thyroid tissue does seem to be extremely rare. Malignant tumors, these days, are almost invariably sent to the laboratory for section, and, were the condition more common, undoubtedly a far greater number would have been reported in spite of the fact that the results of operation are apt to be poor. Of the sixteen cases compiled by Schrager, only two were malignant, both cases first reported by Hinterstoisser. Hinterstoisser [3] reported a third case (second in his series) which he did not call malignant. He quotes Pollard as having recorded a malignancy of a lateral accessory thyroid, but Pollard [4] declared that he did not consider his case malignant.

1. Schrager, V. L.: Lateral Aberrant Thyroids, Surg., Gynec. & Obst. **3**: 465, 1906.

2. Wohl, M. G.: Carcinoma of Lateral Aberrant Thyroid, Interstate M. J. **24**: 1044 (Nov.) 1917.
3. Hinterstoisser: Wien. klin. Wchnschr. **1**: 651, 1888.
4. Pollard, B.: Tr. Path. Soc. London **37**: 507, 1885-1886; abstr., Brit. M. J. **1**: 446, 1886.

Gutmann,[5] according to Hinterstoisser, reported a case of carcinoma of an accessory thyroid. We have not been able to obtain a copy of this thesis.

Pool [6] reported a case in 1910, and Wohl one in 1917. We report a case of our own, making, as far as we have

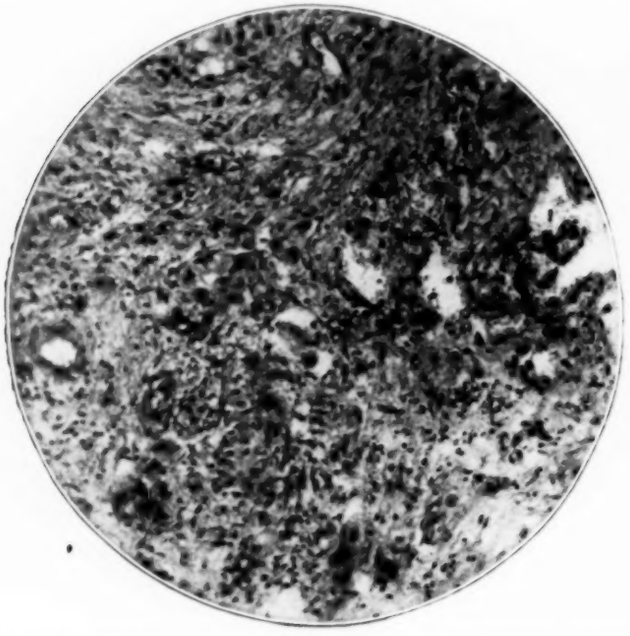

Fig. 3.—Section of tumor: indistinct alveolar arrangement; irregularity of cells, invasion of stroma; slightly reduced from a photomicrograph magnified 110 diameters.

been able to discover, the sixth case. This patient was admitted to our service at the Michael Reese Hospital with the safe diagnosis of "tumor of the neck."

History.—B. K., a woman, aged 55, housewife, came to the hospital because of a lump in her neck. About one and one-half years before, the patient first noticed a small, hard nodule in the left side of her neck about one-third the distance from the mastoid process to the middle of the clavicle. The tumor gradually increased in size until it was as large as an English walnut. At no time was there any pain or tenderness. For almost a year the tumor retained about the same dimensions, decreasing and increasing, however, in size. The fluctuations were slight, and the time interval was irregular. Sometimes the period of diminution was long and the period of increase short, and sometimes the opposite. So far as the patient knew, the fluctuations were not related to any incidents or habits of life. Within the last two months the tumor had grown rapidly. The patient volunteered the information that this growth seemed to be from the periphery of the mass, as if it were growing into the adjacent normal tissues of the neck. This growth was accompanied by a "drawing sensation," but no definite pain. There had been no systemic symptoms; the patient ate well, slept well, lost no weight, and continued her numerous duties as housewife and mother of three children, up to the time of admission to the hospital. There was no dysphagia, no dyspnea, no speech disturbance; in short, there were no subjective symptoms aside from the slight "drawing" sensation already mentioned.

She had always been well and, except at the time of an injury to her right eye many years before, had never consulted a physician. There was no history of trauma to the neck. She had had six children, three of whom died in infancy of unknown cause, and the other three of whom were now living and well. She reached the menopause ten years before.

One sister died of cancer of the stomach; otherwise the family history had no bearing on the case.

5. Gutmann, A.: Inaug. Diss., Berlin, 1883, quoted by Hinterstoisser.
6. Pool: Carcinoma of Accessory Thyroid, Ann. Surg. **52**: 711, 1910.

Physical Examination.—The patient was fairly well developed, and lay quietly in bed in no apparent pain or discomfort. All her teeth were missing except three molars, which were in bad condition. Both tonsils were slightly enlarged. Otherwise the physical examination revealed no deviation from the normal for a woman of her age, except that on the left side of the neck there was a tumor about 9 cm. (3½ inches) long, 5 cm. (2 inches) wide and 30 mm. (1³⁄₁₆ inches) high, situated in the median line of the lateral aspect of the neck (Figs. 1 and 2). The upper margin was about 4 cm. (1½ inches) below the tragus of the left ear; the tumor extended downward and forward. The tumor was round, very hard and slightly nodular. It was not adherent to the skin, but definitely fixed to the underlying tissues. The outline of the tumor was very irregular, and seemed to be invading the adjacent structures by finger-like projections. The lobes and isthmus of the thyroid appeared to be normal. There were no other tumors palpable in the neck or supraclavicular spaces. There was no cervical or supraclavicular adenopathy. The Wassermann reaction was negative. The blood count revealed a hemoglobin of 75 per cent. (Tallqvist's scale); red blood corpuscles, 4,400,000, and white blood corpuscles, 7,800, of which there were 68 per cent. neutrophilic polymorphonuclears, 22 per cent. small mononuclears, 8 per cent. large mononuclears and 2 per cent. transitionals. The blood pressure was 112 mm. of mercury systolic and 75 diastolic, equal on the two sides. The urine was normal except for a slight trace of albumin. Pulse, temperature and respiration were normal.

A diagnosis of a possible malignancy was made, the nature or origin of which could not be determined. Operation was advised.

Operation and Result.—The tumor was circumscribed by a wide incision through the skin and superficial fascia. The sternocleidomastoid muscle was cut. The superficial part of the tumor was freed by careful dissection; the base seemed to extend deeply into the structures of the neck. A suggestion of a line of cleavage was found but could not be followed, the tumor having broken through in many places. The internal jugular vein was exposed, the tumor being very intimately attached to it. As a matter of precaution, rubber protected clips were placed on the vein above and below the tumor, and the tumor was carefully dissected away by means of sharp dissection, which was finally accomplished without injury to the vessel wall. The tumor, which extended down to the carotid sheath but which did

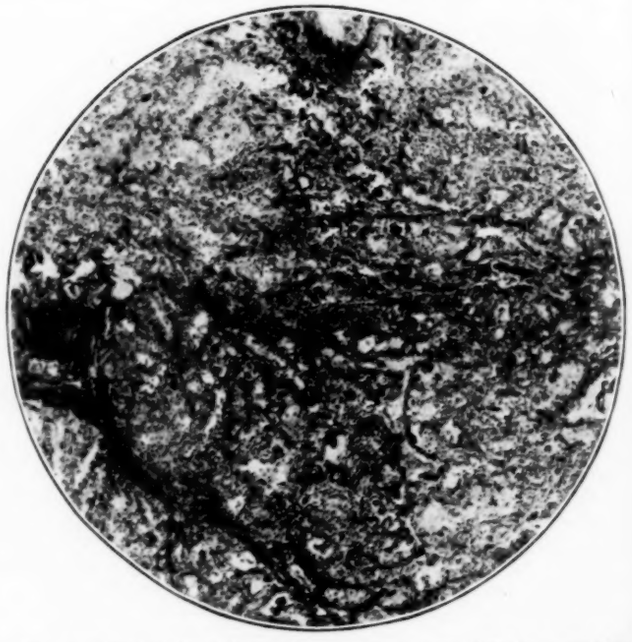

Fig. 4.—Atypical thyroid alveolar structure; some follicles containing colloid; slightly reduced from a photomicrograph magnified 60 diameters.

not seem to involve the muscles, was then dissected free by sharp and blunt dissection. Several smaller projections of the tumor were removed separately. Several small, hard glands in the neighboring tissue and one in the position of the carotid gland were excised. There was no connection with the lateral lobe of the thyroid. The remaining structures were soft, and apparently the entire tumor had been removed. An interesting fact noted was that the jugular vein remained contracted even after the clamps had been removed and its patency reestablished. Its diameter was but one-half normal

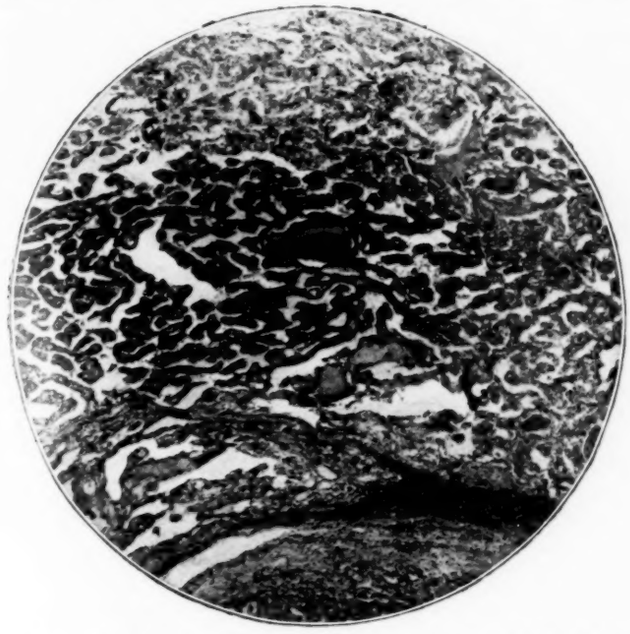

Fig. 5.—More typical thyroid tissues with scattered colloid-containing follicles; slightly reduced from a photomicrograph magnified 60 diameters.

when the tissues were closed over it, at least fifteen minutes after the clamps had been opened. The cut ends of the sternocleidomastoid muscle were reunited, and the wound was closed without drainage.

The patient made an uneventful recovery, and left the hospital on the fourteenth day, to return for intensive roentgen-ray treatment.

Pathologic Report (by Dr. O. T. Schultz).—A hard, firm mass, 6 by 4.5 by 1.5 cm. (2⅜ by 1¾ by ⅝ inch) had a lobulated appearance, areas of pale tissue being separated by bands of more congested tissue. There were also several separate masses which had the appearance of thyroid tissue in which were pale, solid areas resembling the large masses. Some of these had no pale tissue but contained calcified areas and colloid.

Microscopically, the pale tissue which made up the main mass was composed of closely placed alveoli of thyroid type. These varied in size and shape; some were solid and had no lumen, while others had a small lumen which contained no colloid. In the solid alveoli the epithelial cells were large and irregularly polyhedral; in the other alveoli the lumen was surrounded by a single layer of epithelium, which varied in height from low to high cuboidal. In the solid areas there was a great nuclear variation. There were few mitoses. The tissue was traversed by broad bands of dense fibrous tissue, which was invaded by small solid tumor alveoli. One of the masses contained compressed colloid-containing follicles at one side and tumor tissue at the other. Another small nodule was composed only of colloid-containing thyroid tissue

The diagnosis was carcinoma of thyroid.

COMMENT

The diagnosis of carcinoma of the thyroid made after investigation of the excised specimen, coupled with the fact that the mass was in no way connected with the thyroid, makes one believe that the carcinoma must have originated from aberrant thyroid tissue in a lateral position of the neck.

The lessons taught us by this case and out of our reading instigated thereby are:

Lateral abberant thyroids are more common than supposed.

Because of this fact, unilateral enlargements of the neck, and especially cystic enlargements, should make the surgeon consider, among other possibilities, disease of lateral aberrant thyroid tissue.

Malignancy of lateral aberrant thyroid tissue is extremely rare.

The jugular vein is very likely to be involved and injured during the operation, and should be clamped as a preliminary procedure.

We have of late been interested in the perivascular sympathetics, and therefore noted with interest that the vein remained contracted after it had been dissected free from the tumor and after the clamps had been removed.

For a detailed discussion of the cases up to 1906, as well as a discussion of the embryology, the reader is referred to the papers of Madelung,[7] Hinterstoisser,[8] and Schrager;[1] the last, in English, covers the subject up to 1906.

BLOOD PRESSURE FINDINGS IN CIRCULATORY DISORDERS OF THE EXTREMITIES

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In the effort to arrive at a plausible explanation of certain circulatory disturbances of the lower extremities whose origin and mode of production have been obscure, the blood pressure findings have not only been interesting, but may turn out to be of real significance. The gangrenes and the near gangrenes one sees nowadays are customarily differentiated into various groups—Raynaud's disease, arteriosclerosis, diabetes (with arteriosclerosis), senility, thrombo-angiitis, etc.—according to such clinical manifestations and etiologic features as they exhibit. This is, of course, desirable, as it is the scientific method of approach and study. But, in the last analysis, all of these conditions exhibit many features in common, the treatment for the most part is as unsatisfactory and as unsystematized in the one as it is in the other, and the end-result is usually the same. As far as the patient is concerned, it matters little what group he falls in. I merely make this point because it is my feeling that our studies on circulatory disorders of the extremities thus far have been directed too much along unproductive lines and that we have overemphasized the anatomic side of the affair, having little regard to the patient's welfare, and being totally oblivious to certain factors that might well be given deep consideration.

In all circulatory disorders of the extremities, a narrowing of blood vessel lumens comes to pass, gradually in most instances, suddenly in a few. It may be due to some spastic condition of the vessels that is at first of an intermittent character but later becomes continuous, or, as is more usually the case, there is a gradual deposition of material from one

7. Madelung: Arch. of klin. Chir. **24**: 71.

cause or another in the wall of the vessel under the intima or within the lumen itself which eventually totally occludes the vessel. In any case, an obstruction of varying degree is offered the flow of blood. This being the case, one of two things must occur: either the amount of blood that passes the obstruction becomes less or, if the volume is to remain as before, the pressure back of the stream must be raised.

Blood pressure readings taken on patients suffering from a variety of circulatory disorders of the extremities indicate that, far from exhibiting a rise, many of them reveal a low pressure, extraordinarily low in certain instances, while most of them present a normal pressure. Once in a while a slight elevation is encountered. Almost never does one see a real hypertension. The surprising part of this is that it is just the opposite of what one might have expected in view of the fact that a compensatory elevation of blood pressure is frequently seen in generalized arteriosclerosis and in certain forms of heart and kidney disease.

The relation of these findings to ischemic conditions of the legs may be interpreted in two entirely different and distinct ways. It may be argued, on the one side, that in circulatory derangements exhibiting obstruction to the blood flowing toward the lower leg and foot the blood pressure does not rise, the vis a tergo fails to increase, and so no opposition is offered to the further encroachment of the disease process. The result—unless successful treatment is given—is gangrene. On the other hand, it is just as logical to suppose that in the vast majority of disease processes affecting the blood vessels of the extremities there does occur a compensatory rise in blood pressure and that, as a consequence, the threatened and real gangrenes do not come to pass. Only where this rise fails to materialize do we see the gangrenes. The latter theory might well account for our failure to find these disasters among the many hypertension victims. In my experience it is most unusual to see a gangrene or even a threatened gangrene in one of these patients.[1]

I feel, then, that in the blood pressure we may possibly have the explanation of certain obscure features connected with the production of the threatened and real gangrenes. Just why there should fail to be a rise in pressure in these cases is a mystery. It may not be logical to feel that it should come to pass, especially in a disorder that is perhaps affecting but one limb. Nature does so much, though, that we are accustomed to expect the obvious thing from her at all times.

That a gradually narrowing blood vessel lumen—whatever the cause may be—is aided and abetted on its course toward total occlusion by a thinned out, slowed blood stream which has little or no force back of it, no one can deny. Little roughened plaques, tiny cracks in a stiffened intima, pin-point areas of disease, it does not require much of an imagination to see them picking out of the slowly passing stream first, perhaps, the platelets and then such other cell elements as may be needed to form the finally occluding thrombus. Nor is it difficult to understand why so many of these threatened gangrene patients have such a poor collateral circulation, if one will only realize that blind passages, collapsed tubes, can be opened up only by a blood flow of real force—such as they do not seem to have. It follows, then, that the blood pressure element in all cases of threatened and real gangrene is apparently of more importance than has heretofore been recognized.

1. Embolic gangrene is, of course, excluded.

ILLUSTRATIVE CASES

CASE 1.—Mr. B., aged 51, German, suffered from threatened gangrene of both feet. No arterial pulsation could be felt in either leg below the femorals. He had constant pain in both feet, and was unable to sleep. The diagnosis was thrombo-angiitis obliterans. The average blood pressure was: systolic, 110; diastolic, 60.

CASE 2.—Mr. G., aged 49, Russian, was a patient at the Hopkins, St. Agnes and Hebrew hospitals. He suffered from gangrene of the left leg due to thrombo-angiitis obliterans. The leg was amputated. The average blood pressure was: systolic, 132; diastolic, 80.

CASE 3.—Mr. S., aged 35, Russian, a patient at the Hebrew Hospital, suffered from intermittent claudication, pain in the left leg and sleeplessness. There was no pulsation below the femoral artery. The diagnosis was thrombo-angiitis obliterans. The average blood pressure was: systolic, 105; diastolic, 60.

CASE 4.—M. J., aged 42, American, a patient at Church Home and Infirmary, suffered from pain in the left leg and intermittent claudication. A faint pulsation could be felt in the dorsalis pedis artery, but none in the posterior tibial or popliteal. The foot was cold, and blanched on occasion. The diagnosis was Raynaud's disease. The average blood pressure was: systolic, 140; diastolic, 90.

CASE 5.—Mr. X., aged 37, American, seen in consultation with Dr. Arthur Shipley at University Hospital, suffered with pain and threatened gangrene of the left lower leg. There was no pulsation below the femoral artery. The condition was suggestive of thrombo-angiitis obliterans, but might have been due to obscure trauma occurring seven years before. The average blood pressure was: systolic, 110; diastolic, 70.

CASE 6.—Mr. S., aged 55, Russian, had arteriosclerotic gangrene associated with diabetes. The right leg was amputated. The average blood pressure was: systolic, 124; diastolic, 86.

CASE 7.—Mr. S., aged 54, German, had arteriosclerotic gangrene of the right leg associated with diabetes. The leg was amputated. The average blood pressure was: systolic, 160; diastolic, 90.

CASE 8.—Mr. M., aged 55, underwent amputation for thrombo-angiitis obliterans. The average blood pressure was: systolic, 135; diastolic, 90.

COMMENT

These eight cases were taken at random. The average age is 47 + years, the average blood pressure is systolic, 127, diastolic, 78 +. The findings are suggestive. It may be that our present methods of treatment, such as they are, will have to be revised, and a more rational therapy, one that conforms to the actual state of affairs existing, instituted. A later paper will deal with this subject.

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Education and Public Health.—Sensible education in the principles of healthy living should be universal, but neither the state nor the nation should embark upon programs of socialization of medicine, socialization of nursing or the paternalistic or maternalistic care of health of individuals without first looking ahead to see where such policies lead, socially, financially and politically. The police power of the state should be used severely to prevent crimes against the public health; the advisory powers of health departments should be freely used, but the treasury of the state should not be drawn on to pay for personal benefits or class benefits even in the name of health. Public health and private health are not the same, and governments may do for the one what they ought not to do for the other. We Americans cannot boast of the success of our governments, especially the governments of our cities. We cannot boast of our governmental methods of public health administration—and unfortunately our local governments are not becoming more efficient as they become larger. —Prof. George C. Whipple, the Public Health Work of Professor Sedgwick, *Science*, Feb. 25, 1921.

Clinical Notes, Suggestions, and New Instruments

A PEDUNCULATED LIPOMA OF THE ESOPHAGUS *

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The case herewith submitted is unusual with regard to both the type of lesion and the large size of the tumor.

REPORT OF CASE

Mr. S. V. J., aged 62, came to the Mayo Clinic, Nov. 28, 1921. Six years before, on coughing, he brought into his mouth what seemed to be a small growth attached to the uvula. The growth was easily swallowed, but his throat felt sore and swollen for several days. He had no further trouble until three weeks before coming for examination when, following a heavy meal, he had become nauseated, and in vomiting ejected a piece of tissue long enough to protrude from his mouth. He became quite excited and tried to bite it off, but lack of teeth prevented this, and he again swallowed the tumor. His throat felt uncomfortable and his breath was very offensive for a few days following this experience. A

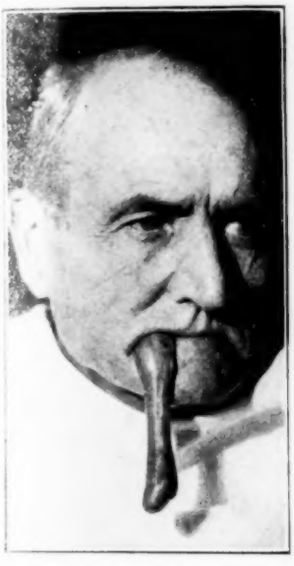


Fig. 1.—Protruding tumor.

Fig. 2.—Patient after operation.

week later the growth was again regurgitated, but was swallowed with comparative ease. There was no dysphagia at any time.

November 30, with the aid of an esophagoscope introduced without anesthesia, on the right wall of the esophagus just below the introitus was seen the origin of a pedunculated tumor; the pedicle was about 1 cm. (⅜ inch) in diameter. No attempt was made to pull the growth out of the mouth. A week later, after the patient had eaten breakfast, vomiting was induced and the tumor regurgitated (Fig. 1). It extended from the mouth 11.5 cm. (4½ inches) beyond the incisor teeth. The tip was 6.5 cm. (2 9/16 inches) in circumference, gradually tapering toward the base. It was rather firm and covered with normal mucous membrane, except for a small area of ulceration near the tip.

Removal by means of snare or electric cautery through the mouth was considered, but on account of the high attachment it seemed best to open the esophagus through an incision on the left side of the neck and excise the growth. The operation was performed, December 7, by Dr. Judd, whose data concerning the operation are as follows:

The patient had been made to vomit the tumor out of his mouth prior to operation, as it was feared some difficulty might be encountered in locating its base. The neck was infiltrated according to Allen's technic, 0.5 per cent. procain being used. The injection was made in the middle and posterior portion of the left sternocleidomastoid muscle. About a 13.7 cm. (5½ inch) incision was made along the anterior portion of the left sternocleidomastoid muscle, extending from 2.5 cm. (1 inch) below the mastoid process almost to the

Fig. 3.—Tumor after removal.

Fig. 4.—Longitudinal section of tumor.

sternoclavicular articulation. The tissues were divided in layers, and the muscle was retracted to the outer side. Coming down to the thyroid capsule, the thyroid gland was gently retracted inward, and the carotid sheath and vessels were

Fig. 5.—Photomicrograph of covering of normal mucous membrane, × 50.

pulled to the outer side of the neck. The omohyoid muscle was divided, and, the cricothyroid cartilage being identified, the esophagus was sought opposite this point, much the same as in operations for esophageal diverticula, which almost always come off at the pharyngo-esophageal dimple. On the

* From the Section on Medicine, Mayo Clinic.

left side, care was taken to avoid the recurrent laryngeal nerve, but this structure was not identified during the operation.

After a careful dissection down to the esophagus, an opening was made and the base of the tumor identified. Although it had been the intention to remove the tumor from below upward, it was now decided to withdraw it through the wound. The base was ligated and the tumor severed. The raw surface over the stump was closed with normal mucous membrane from the esophagus, and the esophagus itself closed with two rows of catgut. The wound, which was soiled from regurgitated material, was thoroughly washed and closed tight except for an opening for a small rubber tissue drain. The tissues of the neck were closed in layers, the skin being closed with interrupted dermal sutures. The mediastinum had not been invaded, and a satisfactory prognosis seemed certain. The patient cooperated well, and the whole procedure was accomplished without difficulty.

The postoperative course was entirely satisfactory. Nothing was given to the patient by mouth for eight days. He was nourished by hypodermoclysis and proctoclysis. He bore unflinchingly the lack of fluids by mouth. The drain was removed at the end of seventy-two hours, and the neck healed without infection (Fig. 2).

At the end of a week, when water was given in small quantities, the patient had some difficulty in swallowing. This soon disappeared, however, and when he was ready for dismissal, two weeks after operation, there was only slight evidence of dysphasia. The length of the tumor after removal (Figs. 3 and 4) was 22.5 cm. (8¾ inches). Microscopic examination showed it to be a simple lipoma (Figs. 5 and 6).

COMMENT

Benign tumors of the esophagus occur rarely. A few cases of myomas, angiomas and fibromas, and a large number of cases of polyps have been reported, but the majority were discovered at postmortem and had not caused symptoms. Rokitansky[1] reported a polyp 18.75 cm. (7⅜ inches) in length which caused slight dysphagia. In discussing benign tumors of the esophagus, several authors have stated that lipomas may occur; but I have been unable to find a report of such a case. Jones[2] reported a pedunculated lipoma of the larynx 5 cm. (2 inches) in diameter, arising from the right aryepiglottidean fold and protruding into the mouth.

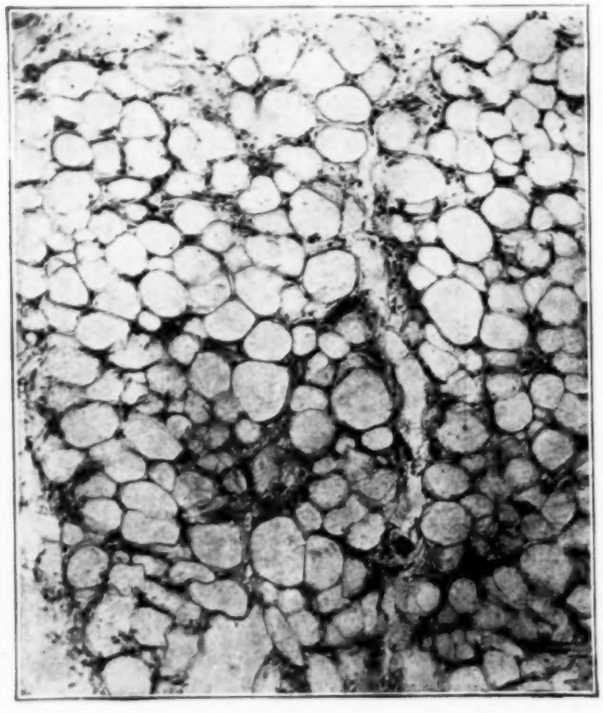


Fig. 6.—Photomicrograph of tumor, × 60.

1. Rokitansky, quoted by Zenker, F. A., and von Ziemssen, H.: Diseases of the Esophagus, Cyclopaedia of Practical Medicine (Ziemssen), New York **8**: 1-214, 1878.

A CASE OF SPOROTRICHOSIS IN CONNECTICUT*

CHARLES T. NELLANS, M.D., NEW HAVEN, CONN.

Since 1898, when Schenck[1] published a report of human infection with a sporothrix, interest in the condition has not been lacking. The French, principally de Beurmann and Gougerot, have continued the study of the organism and have pointed out not only its widespread distribution in France but also the comparative frequency of human infection. In America, eighty-two human cases, of which fifty were substantiated by culture, were compiled in a survey of the literature by Meyer[2] in 1915. The disease at that time, as would seem to be the case now, occurred with greater frequency throughout the West and the Northwest, in the valleys of the Mississippi and the Missouri rivers, appearing less frequently throughout the more Eastern seaboard states.

Fig. 1.—General distribution of lesions on arms.

During the last four years occasional reports have appeared in the American literature, some twenty cases having been recorded. This small number, however, does not indicate that the disease is a rare one. On the contrary, as knowledge of the condition becomes more general, recognition occurs in direct proportion and cases are now being seen which are not reported.

In 1917, Blaisdell[3] reported a case in Boston which was the first recorded case in New England. In 1918, Cragin, Hardy and Shaw[4] reported a case in Maine. A personal communication to Dr. Lane from Dr. Harvey P. Towle in September, 1921, states that several unreported cases of sporotrichosis had been seen in Boston since 1918.

The case here reported is the first, as far as can be ascertained, seen in Connecticut:

A man, aged 45, referred by Dr. W. S. Lay, entered the New Haven Hospital in the medical service, Sept. 7, 1921. In November, 1920, there appeared on the lateral surface of

2. Jones, S.: Fatty Tumor Removed from Right Arytoeno-Epiglottidean Fold, Tr. Path. Soc. London **32**: 243, 1881.

* From Yale University School of Medicine and the New Haven Hospital, Department of Internal Medicine, Subsection of Dermatology.

1. Schenck, B. R.: On Refractory Subcutaneous Abscesses Caused by a Fungus Possibly Related to a Sporotricha, Bull. Johns Hopkins Hosp. **9**: 286, 1898.

2. Meyer, K. F.: The Relations of Animal to Human Sporotrichosis: Studies on American Sporotrichosis, III, J. A. M. A. **65**: 579-585 (Aug. 14) 1915.

3. Blaisdell, J. H.: Sporotrichosis: A Clinical and Histopathological Report of the First Case to be Published in New England, J. Cutan. Dis. **35**: 452 (Aug.) 1917.

4. Cragin, D. B.; Hardy, T. E., and Shaw, J. F.: Sporotrichosis, Report of Case, J. Maine M. A. **9**: 93 (Nov.) 1918.

the left leg just below the knee, a subcutaneous, pea-sized, firm, painless nodule over which the skin was easily movable and not discolored. Within a fortnight the nodule increased in size to that of a hazelnut. The overlying skin progressively reddened and became more closely associated with the underlying nodule, the whole process attaining a purplish hue. No history was obtainable of a concomitant lymphangitis, but at about this time the process spread, similar lesions appearing on the lateral surface of the left thigh, on the right leg, and on both forearms. The earlier nodules appeared near the distal end of the extremities, the progress of the lesions being upward.

On admission, the patient was seen by Dr. Lane, chief of the section of dermatology, who made a tentative diagnosis of sporotrichosis, and thus described the lesions:

On each forearm were a number of lesions varying from a very small pea to a hazelnut. The earlier lesion was a hard, cutaneosubcutaneous nodule. Large ones were red, with softened center. Where they had been incised and healed, there was a deep, dusky pigmentation. There was one small subcutaneous nodule about 3 inches (76 mm.) to the right of the umbilicus. On the outer surface of the left leg there was a scar about 1 inch (2.5 cm.) long and one-half inch (13 mm.) wide, and near it a softened nodule. There was a soft nodule on the outer surface of the left thigh, and several scars. There were several scars on the right thigh, and three disappearing nodules. There was one spot about the size of a quarter of a dollar with a granulating surface. There were two lesions which had small discharging sinuses. The larger tumors were typical gummas, soft in the center but, with the exception of the two just mentioned, covered with unbroken skin.

Fig. 2.—Lateral surface of thigh.

Several of the nodules were excised for microscopic examination and for culture. The pathologic report was made by Dr. R. A. Lambert:

The specimen consisted of two small pieces of skin and subcutaneous tissue. The larger, about 1 by 1.5 cm. (⅜ by 19/32 inch), showed a small abscess cavity beneath the red, brawny epidermis. The abscess contained a thin, bloody pus. From this, smears and cultures were made. The second piece of skin included a nodule, which in the fixed specimen looked firm and white. The epithelium was everywhere apparently intact. Microscopically, the smaller of the two pieces of tissue showed the more clear cut lesions. In the derma there was a small abscess with an irregular cavity which communicated with the exterior through a tiny break in the epidermis. The cavity contained polymorphonuclear leukocytes in various stages of disintegration, a moderate amount of fibrin, and a few red cells. The abscess wall was made of granulomatous tissue of unusual character. Beneath the layer of polymorphonuclear leukocytes there was a zone of large, elongated cells with pale nuclei, and indistinctly outlined cytoplasm of the same general type as the so-called epithelioid cells which form the body of a tubercle. These cells were, for the most part, arranged with their long axes parallel to one another and perpendicular to the cavity wall. Some of the cells were multinucleated. Interspersed among them were a few polymorphonuclear leukocytes. Outside this epithelioid zone there were great numbers of mononuclear wandering cells mostly of the plasma cell variety. They were scattered through a loose connective tissue along with developing fibroblasts and young blood vessels. The abscess wall thus showed clearly three zones: (1) a layer of pus cells; (2) an epithelioid zone, and (3) an outer zone in which plasma cells predominated. Extending through the derma about the abscess there were focal inflammatory nodules, some of which simulated tubercules. They were made up of epithelioid and connective tissue cells, occasional giant cells of the Langerhans type, mononuclear cells, and a few polymorphonuclears. The histologic picture clearly suggested a specific type of chronic granuloma. The presence of great numbers of epithelioid cells and their arrangement here and there into more or less discrete nodules made the reaction very much like that of tuberculosis. There were, however, at least three features that distinguished the lesion from tuberculosis: (1) the presence of polymorphonuclear leukocytes throughout the entire inflammatory zone; (2) the absence of coagulative necrosis, and (3) the presence of blood vessels in the nodules. The histologic picture agreed in every detail with that described by de Beurmann and Gougerot in cutaneous lesions of human sporotrichosis. The three distinct cellular zones forming the abscess wall are regarded by these and other investigators as characteristic of the reaction. Anatomical diagnosis: probably sporotrichosis.

Bacteriologic examination of the pus from an incised lesion showed a sporothrix to be present. Very rapid and satisfactory improvement occurred after administration of potassium iodid by mouth.

ADMINISTRATION OF ETHER BY THE USE OF A SIMPLE MECHANICAL ETHER DROPPER*

CONSTANTINE L. A. ODÉN, M.S., M.D., CHICAGO, AND ALEXANDER FOSHEE, M.D., NEW YORK

The open method of etherization was originated and developed in 1893 by Dr. Lawrence Prince. Isabella Herb was associated with Dr. Prince, and in 1888 she reported 1,000 cases in which she gave the open method. She relates that the superiority of this method is evidenced by a steady growth in popularity. Acccording to the statistics of the committee on anesthesia of the American Medical Association, more than half of the ether anesthesias administered from 1905 to 1912 were by the open method. The simplicity of this method should argue rather for than against its efficiency.

TECHNIC OF OPEN ETHER ADMINISTRATION

The administration of ether spells comfort or discomfort to the patient. Often it establishes his attitude toward ether, and determines the patient's reaction toward the whole art of surgery. Many hospitals are not equipped for the induction of gas and oxygen, which doubtless is most agreeable to the patient, and must resort to ether alone, which has been found the most desirable method. By gaining the patient's confidence and telling her to breathe naturally, allowing her at first barely to smell the ether, and then gradually increasing the drop, we have no trouble to induce narcosis. Rarely do we experience any excitement stage. Occasionally a volatile oil, such as oil of lavender, is placed on the mask, which disguises the odor of the ether, and the patient loses consciousness before the ether becomes too concentrated. A gauze ring pad is placed over the face before the anesthetic is started; this keeps the air from passing in except through the cone. The cover on the cone should not be too thick. From four to six layers of gauze are ample; if more are used, this method becomes semiclosed. A stockinet is much better for covering the mask than is gauze. If the cone is too thin, it is difficult or impossible to induce and maintain anesthesia. The ether should be dropped continuously on the cone. If the dropping

* Read before the gynecologic conference at Bellevue Hospital, Dec. 3, 1921.

* From the Post-Graduate Department of Surgery, University and Bellevue Hospital Medical College, New York.

is suspended until the patient becomes rigid, then this becomes an uneven narcosis. Intermittent administration of ether has the further disadvantage or danger of administering too concentrated a vapor in one's haste to get the patient in under again. It has been proved that from 6 to 7 per cent. ether vapor is the greatest concentration which can be inhaled without irritation to the air passages. When the proper technic of etherization is carried out by a steady, even drop, which can best be done by the use of a mechanical apparatus as described below, narcosis develops along the lines of a natural sleep. It is rare not to have a smooth anesthesia, with relaxed muscles and perfect oxygenation.

Apparatus for administering ether, attached to operating table.

The open drop method is suitable for any operation in which ether is the anesthetic of choice. Trouble during induction is due to faulty technic or poor ether.

ADVANTAGES OF THE OPEN METHOD

This rests on demonstrated facts. The greatest advantage of this method is the large and constant supply of oxygen that the patient receives during the anesthesia, which is indicated by the good color of the skin and blood. There should be no toxic effects. Gatch,[1] in 1911, during a series of experiments, proved that the severity of pulmonary lesions found after experimental etherization by the closed method is accounted for by the great concentration of the ether vapor.

Dresser,[2] in 1895, showed that ether vapor in the closed mask often rose to a concentration of 34 per cent., while 6 or 7 per cent. is the strongest concentration that can be inhaled without irritation to the air passages. He regards any concentration of ether which cannot be inhaled by the conscious person without coughing as harmful to the lung epithelium.

Offergeld,[3] in 1898, studied pathologic changes in the lungs after etherization of a series of animals for from seventy to eighty minutes by the closed method. The open method was given to another series of animals. Many of the animals etherized by the closed method died of bronchopneumonia; the rest were killed, and all were found to have patches of consolidation, desquamation and hemorrhages into the alveoli. None of the animals anesthetized by the open method died. After two days there were no changes in the lungs at necropsy, while the closed method victims showed pathologic changes four days after etherization.

As mentioned in a previous paragraph, a perfectly smooth, even drop can best be given by the use of a mechanical dropper. Various ether droppers have been made for this purpose, but many of these have been unsatisfactory; for this reason we have devised an apparatus, which in every way meets the necessary requirements. It has proved that narcosis can be produced without any excitement stage. The pulse and respiration remain good, the color of the patient is excellent, and the postoperative blood pressure in many cases exceeds the preoperative pressure.

The apparatus is very simple, but is efficient when properly handled. It consists of a transparent glass cup through which runs a needle valve that regulates the drop. The cup holds one 4 ounce can of ether. This cup is suspended on a flexible arm which is fastened to a clamp, and can be attached to any operating room table with ease. The flexible arm allows the cup to be placed at any desired angle.

The advantages of this apparatus are: that it is easy to manipulate; it gives an even, steady drop on one place of the cone; it allows perfect oxygenation with smooth anesthesia; induction is readily and easily produced with it; it leaves one hand free so that the anesthetist may attend his patient with ease, and it can readily be attached to any operating table.

CONCLUSIONS

With the open method of etherization, the blood is well oxygenated. The concentration of the ether is small. There is no rebreathing, but always a fresh supply of air. There is less injury to the lung epithelium. Anesthesia is easily induced, and a simple mechanical apparatus is best for obtaining a smooth, even drop.

The apparatus described was made by the Foregger Company, Inc., 47 West Forty-Second Street, New York.

1. Gatch, W. D.: The Use of Rebreathing in the Administration of Anesthetics, J. A. M. A. **57**: 1593 (Nov. 11) 1911.
2. Dresser: Bull. Johns Hopkins Hosp. **6**: 7, 1895.
3. Offergeld: Arch. f. klin. Chir. **57**: 175, 1898.

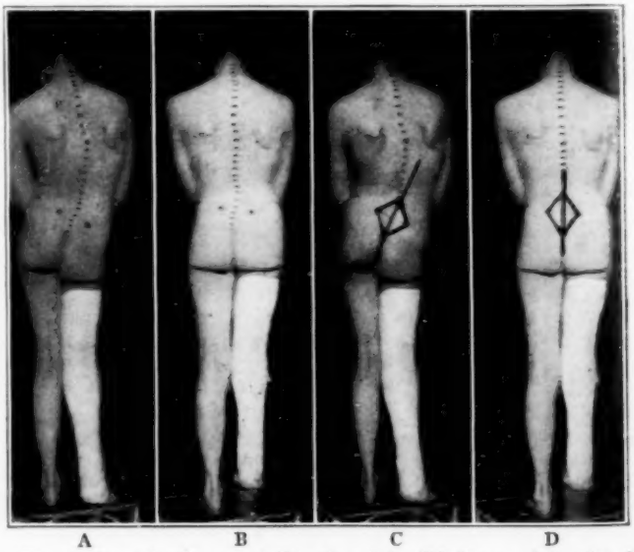
LEVELING (BALANCING) THE PELVIS IN CASES OF INEQUALITY OF LENGTH OF LEGS, WITH A DESCRIPTION OF A PATHOGNOMONIC SIGN

PHILIP LEWIN, M.D., CHICAGO
Attending Orthopedic Surgeon, St. Luke's and Cook County Hospitals; Associate in Orthopedic Surgery, Northwestern University Medical School

The case herein reported emphasizes the importance of balancing the pelvis, in the presence of infantile paralysis, congenital shortening of a leg, fractures involving a leg, or disease of the bones or joints of the pelvis and lower extremity. This can be done only after a careful examination of the nude dorsal surface of the body, with the patient standing. The examination should be insisted on, in all cases of possible involvement of the area from the midlumbar to the midthigh regions.

REPORT OF CASE

A girl, aged 17, a pupil of the Fallon School for Crippled Children, was admitted to St. Luke's Hospital, in the service of Dr. John Lincoln Porter, with the history of having had an attack of infantile paralysis when 2 years old. Because of a flail right knee, with marked involvement of all groups of muscles, no tendon transplantation was possible, and an arthrodesis was performed. The ankylosis was successful.



A B C D

Fig. 1 (case herein reported).—*A*, pelvic disbalance; right gluteal crease, posterior superior iliac dimple, iliac crest and anterior superior iliac spine are low; three folds in left iliocostal angle, none in right; marked right total scoliosis. *B*, 2 inch elevation under right foot; creases, dimples, crests and iliac spines level; no scoliosis, iliocostal angles symmetrical. *C*, rhomboid tilted. *D*, rhomboid level.

When she stood on both feet: (1) There was marked total right scoliosis (Fig. 1 *A*); (2) the right gluteal crease was 2 inches lower than the left; (3) the dimple at the posterior superior iliac spine was lower on the right side; (4) the right iliac crest and anterior superior spine were low, and (5) there were three folds in the left iliocostal angle and none in the right. When wood splints were placed under the right foot until it was raised 2 inches, the result—a balancing of the pelvis with correction of the scoliosis—was striking (Fig. 1 *B*).

A word of caution is not amiss: The difference in level of the gluteal creases is not directly proportionate to the inequality in length of the legs because in infantile paralysis affecting the muscles of one buttock, that part is much smaller throughout. In such cases the dimple at the posterior superior iliac spine is a better landmark. The entire femur is possibly slightly smaller, owing to neurotrophic disturbance. Asymmetry of the pelvis may be present.

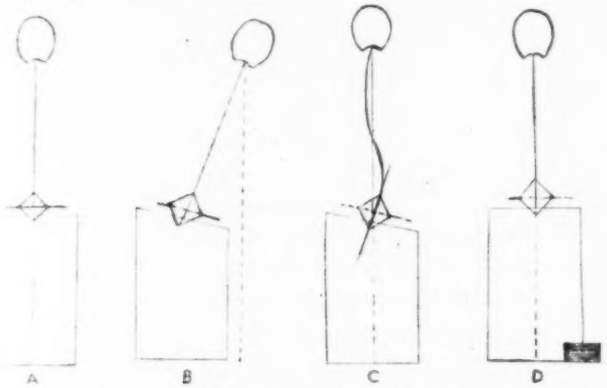


Fig. 2 (schematic).—*A*, legs of equal length, pelvis and posterior superior iliac spine dimples level; rhomboid upright. *B*, right leg 2 inches short; pelvis and dimples unlevel; rhomboid tilted; head and trunk displaced to the right. *C*, same as figure B, except that in the endeavor to maintain the head over the middle of the pelvis, the spine assumes a left dorsal, right lumbar scoliosis. *D*, with 2 inch lift under right leg, the head is maintained over the middle of the pelvis and it is not necessary for the spine to curve because now the pelvis is level and the rhomboid is again upright.

It is surprising how many adults (especially females) with low back pain, may be relieved by leveling the pelvis.

Comparatively few orthopedic surgeons attach sufficient importance to the rhomboid of Michaelis as a landmark in determining pelvic balance, whereas obstetricians have emphasized this point particularly. It has been described by De Lee as a diamond-shaped depression formed by the dimples of the posterior superior spines of the ilia, the lines formed by the gluteal muscles and the groove at the end of the spine. Variations in its shape and size, he says, give us valuable information in deformed pelves.

If this rhomboid is outlined on the patient, while standing, the vertical axis should be parallel with the long axis of the body. If not parallel, it is a pathognomonic sign of definite value (Fig. 1 *C*). I have not seen this mentioned in the literature. In the case described, the wrinkles in the iliocostal region are on the side opposite the short leg; the high shoulder is on the same side as the shot leg and on the same side as the low iliac crest.

RUPTURED ANEURYSM OF THE TONGUE

FRED C. SABIN, M.D., LITTLE FALLS, N. Y.

History.—Mrs. J., aged 34, white, married, referred to me by Dr. Eveleth, Jan. 18, 1922, complained of persistent bleeding from the tongue. The history was negative, with the exception of three previous pregnancies. During the first pregnancy, varicose veins formed on the inner sides of both thighs. During the second and third pregnancies these veins became more prominent, and some formed below the knees. During these pregnancies her general health was good. In the interval between pregnancies these veins became much smaller and gave the patient no trouble or discomfort. The venereal history was negative. No Wassermann examination was made.

Present Illness.—According to the menstrual history, the patient was thirty-eight weeks pregnant. Her general health had been rather poor during this period. Since the twenty-fifth week there had been a gradual enlargement of the veins of the lower extremities. January 11, she first noticed "a dark red blister on the tongue," which pulsated synchronously with the heart beat. This blister was about the size of the head of the old phosphorus match. It was located on the dorsum of the tongue, in the median line, about 2 cm. (¾ inch) from the tip. This blister was annoying because of its location, but was never painful. January 15, on rising, the patient noticed that her lips were blood stained and that the blister had disappeared (ruptured). There was bright red blood oozing from the tongue. In spite of local applications of ice, alum and caustics, the oozing persisted. Following exertion, the blood would spurt in jets synchronously with the pulse.

Examination.—The patient was quite nervous and worried over her condition. The tongue was covered with a heavy, black coating from continued use of the caustics. At the site where the blister had been, an artery the size of a pencil lead was spurting blood to a distance of from 12 to 15 inches (30 to 38 cm.) The abdomen was markedly enlarged. There were no enlarged veins in the abdominal wall. In the vulva the veins stood out in clusters not unlike a bunch of grapes. There were marked varicosities of the veins of both lower extremities below and above the knees. There was no edema of the feet or ankles. The blood pressure was: systolic, 135; diastolic, 85.

Operation and Result.—Under procain-epinephrin infiltration anesthesia of the tongue I placed one deep silk suture, checking the hemorrhage. This suture was removed on the sixth day. By this time the black coating had disappeared, and the tongue was normal in appearance. The patient was put to bed and was given liquor ferri et ammonii acetatis (Basham's mixture) and digitalis, and the veins of the vulva and extremities decreased somewhat in size. January 30, I delivered the patient of twin girls weighing 7½ and 7¾ pounds (3.4 and 3.5 kg.), respectively. The second stage of labor was somewhat prolonged. The babies were both well formed and above the usual weight for twins.

23 North Ann Street.

A NEW INTRAVENOUS NEEDLE

LOUIS LANDMAN, M.D., NEW YORK

Various kinds of needles are to be found in a physician's office. When taking blood for different tests, many use the Wassermann needle; for giving intravenous injections, a Luer or other needle is used.

Needle for intravenous administration.

I have devised a new intravenous needle, illustrated herewith, which will prove useful (1) for taking blood for various tests; (2) for the administration of intravenous medication, and (3) for blood transfusion.

The advantageous points presented by this needle are that (1) the fulcrum is in the center and thus enables the operator to steady the needle; (2) blood is not so likely to get over the fingers; (3) by having the hold on the fulcrum, connection can be made with either tube or syringe without contamination; (4) it is a straight needle and can be easily cleaned.

The needle is manufactured by Beckton, Dickinson & Co., 220 East Sixty-Ninth Street, New York.

Anesthetics in China.—The earliest record of the use of anesthetics in China was in the third century B. C. It is not known what is the exact composition of the narcotic wine of Pien Chiao, the effervescing powder of Hua To, the olibanum spirit of the magician, or the "tincture forget-oneself" of Chen Shih-toh. Anesthetics are practically unknown in China at the present time.—*China M. J.* **35**:473 (Sept.) 1921.

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SATURDAY, MARCH 18, 1922

PLACE OF TECHNIC IN THE PROGRESS OF MEDICINE

Progress beyond the traditional knowledge that we have inherited from our ancestors does not go on rapidly through the process of unaided observation and "the half-unconscious education which results from mere experience." In seeking the facts that lead to new discoveries in science, the ingenuity of the investigator engaged in the search is often taxed to the utmost. As Lord Moulton [1] fancifully expressed it, in an incisive defense of experimental research, the game has to be stalked from long distances and often by circuitous routes. It is no longer possible to walk directly up to it. Part of most plans for scientific investigations of the present day are concerned with the development of methods—with the technic of research. Professor Hopkins [1] has remarked, for instance, that although there were few aspects of modern bacteriology which the epoch-making Pasteur did not foresee and initiate by pioneer experiments, the advance made by others in bacteriologic technic was, during his lifetime, so great as to leave him almost an amateur among experts in the narrow domain of pure technicalities.

An excellent example of the triumph of new technic in the progress of science is furnished by Koch's greatest achievement, the invention of the poured plate method in 1881. At the annual meeting of the American Public Health Association in New York a few months ago, Professor Jordan [2] of the University of Chicago made significant reference to the procedure which has played a part so highly important in the modern study of disease. He reminded his hearers how in rapid succession came the discovery of the bacilli of tuberculosis, typhoid fever, diphtheria and other widespread diseases, of the micrococci of ordinary suppuration and of gonorrhea, of the vibrio of Asiatic cholera, and of many other micro-organisms still today regarded as bearing a specific causal relation to a specific disease.

Nor is the value of novel technic confined solely to such striking instances of eminent discovery. It is the lack of a suitable method of approach which often limits the resourcefulness of the surgeon. A comparable ignorance of appropriate chemical or physical procedures may explain the failure to make an illuminating diagnosis in certain cases. Even therapy depends on devices as well as on drugs to secure desired remedial or curative results. Lee [3] has truly remarked that one cause of distrust of medicine lies in the inability of the physician to do certain things. Technic often is the key to success, and new technic, like other discoveries and inventions, is usually the outcome of experiment and investigation. Ehrlich's studies with dyestuffs led to some of the great triumphs of present day chemotherapy. Galvani's observations of frogs were the beginnings of our knowledge of electrotherapy. If it is to prosper in every direction to the greatest degree, medicine must safeguard the activities of those engaged in the study of technic as well as of those concerned with the "practice" of their profession; for it has often been pointed out that the success of the practical man is largely due to the fact that he applies the principles which the idealist has discovered. "The more we encourage the freedom of research," says Lee, "the sooner will scientific medicine arrive at its goal."

1. Science and the Nation, edited by A. C. Seward, Cambridge University Press, 1917, p. xvii.
2. Jordan, E. O.: The Relations of Bacteriology to the Public Health Movement Since 1872, Am. J. Pub. Health **11**: 1042 (Dec.) 1921.

"THE FUTURE INDEPENDENCE AND PROGRESS OF AMERICAN MEDICINE IN THE AGE OF CHEMISTRY"

The recent war caused American physicians, chemists and, to some extent, the American public to realize as never before how dependent they had been on Germany for many of their most valuable, often almost indispensable, drugs. Even before the United States was drawn into the war, adequate supplies of such important drugs as arsphenamin, the modern local anesthetics, hypnotics, diuretics and certain analgesics were not available. The need for some of these was first met by other foreign countries (Canada and Japan, for example); but before the war was over, American manufacturers were making adequate supplies [4] of those urgently needed.

On the chemists devolved the problem of meeting the war-time shortage of drugs. In their work on war gases they had had an example of what could be accomplished in an almost incredibly short time, when facilities for research were provided on a large scale and under conditions allowing of the fullest cooperation of chemists, physicists and physicians. They were not slow, therefore, to appreciate the situation. Even before the armistice, the American Chemical Society appointed a committee to determine, among other things, whether there is "no valuable lesson for peace in this mighty and successful effort in the making of war."

3. Lee, F. S.: Scientific Features of Modern Medicine, New York, Columbia University Press, 1911, p. 169.
4. The American Chemical Industry, editorial, J. A. M. A., Aug. 6, 1921, p. 407.

The report of this committee, entitled "The Future Independence and Progress of American Medicine in the Age of Chemistry," has appeared; it contains much of interest to the physician. Some of the achievements in synthetic organic chemistry in relation to therapeutics are briefly outlined: how, for example, chemists, pharmacologists and clinicians, starting from the naturally occurring cocain and atropin, have made modifications and, for some purposes, improvements in these drugs; often valuable compounds which superficially seem to have no connection with the original drugs have resulted from these studies.

The introduction of synthetic organic chemicals, beginning with ether and chloroform, has revolutionized the practice of medicine and surgery in the last seventy-five years. Yet nearly all these discoveries were made in a haphazard, often accidental way. There have been few well directed and well supported efforts looking toward the development of this line of work. This history offers a sorry contrast to that of the development of modern dyes, explosives and poison gases. The study of pharmacology today is at about the stage the study of the dyes was sixty years ago: "Originally dyes (like the older drugs) were obtained from natural sources. . . . Then, in 1856, Sir William Perkin accidentally prepared the first aniline dye. . . . In the sixties, pioneer chemists started on the finest ultimate analysis of the dyes. . . . The result of this . . . has been the complete conquest by man of the domain of color production."

There were powerful financial incentives to develop the chemistry of dyes; there were not only monetary but also patriotic motives for the development of explosives and war gases, and the governments financed the latter. The development of pharmacology (as shown by the section of the report on "Existing Facilities for Chemomedical Research") has been left largely to the pharmacological laboratories of the German universities and the German institutes for experimental therapeutics, hygiene, and the like; these were supported largely by the German governments. Recently, private endowment has also played a part in Germany; the pioneer work of Ehrlich on arsphenamin was made possible by the Speyer endowment. The universities of the United States, as regards facilities for the study and teaching of pharmacology, are still behind those of Germany; scarcely one has a department comparable, as regards resources, with many departments of anatomy and physiology, and most have only makeshifts or pseudodepartments. Our schools of medicine and hygiene are largely ignoring the great services which pharmacologists, in close cooperation with chemists and clinicians, can render to hygiene and preventive medicine; for just as smallpox and typhoid have been controlled by vaccination, so treatment of the individual syphilitic by arsphenamin or similar drugs, thus rendering him noncontagious, promises to be the chief factor in the elimination of syphilis. The use of drugs (silver compounds) has saved the sight of countless children; curing the person infested with hookworms by the use of drugs, curing the malaria carrier by quinin, curing the victim of bilharziasis with antimony, and checking for a time at least the infectivity of the leper by the use of chaulmoogra oil derivatives, are among the most promising chemotherapeutic means of controlling these diseases. But the field of preventive medicine has scarcely been entered. Here certainly is an opportunity for what the chemists' report calls an "outlet for practical idealism," through the liberal endowment of an institute in which scientific investigators in all the fields interested in drug therapy may cooperate to determine what drugs are necessary and what are the best and most economical methods of producing them. Coincidentally, there is an opportunity for the provision of better facilities for the study and teaching of pharmacology in the schools of medicine and hygiene.

Some twenty years ago, Congress, with rare vision, established the Hygienic Laboratory of the United States Public Health Service; the plan of organization was unsurpassed by that of any laboratory in the world. The staff has included some of the foremost representatives of chemistry, pharmacology, bacteriology and medical zoology, the specialties most needed for a cooperative attack on the great problems of health, in the country. But subsequent congresses have failed to provide for any considerable growth of this laboratory; it stands virtually as it was two decades ago. Enlarged and with adequate support, this laboratory could give the United States the leading place in the world in this great scientific and humanitarian work. The people of this country spend $500,000,000 a year on drugs in addition to other large sums for other means of obtaining relief from suffering and disease. Would it not "pay" to spend a million or two a year to determine whether this great drug bill could not be reduced by the discovery of better, fewer and cheaper drugs as well as of other means of preventing disease and obtaining relief from pain? Physicians and others who believe such to be the case should use their influence with Congress to secure more adequate support for the Hygienic Laboratory.

A governmental research institute of the type described would be ideal; if, however, the government cannot be made to see its opportunity, an adequately endowed and controlled research institute, in which there will be actual cooperation, must be the goal of those who realize the vast benefits which will accrue from the proper type of research in drug therapy. In such institutions, research workers of a high type, with sufficient remuneration to enable them to give the fullest attention to the problems demanding solution,

may shortly achieve results of such great scientific as well as monetary value as to dwarf into insignificance the sums spent for endowment.

THE QUALITY AND VITALITY OF AMERICA'S POPULATION

No group of citizens has a greater interest in the quality of its population than does the medical profession. The physician is naturally solicitous about the health, intelligence and "all around efficiency" of the peoples of America, and inevitably the factors that control or modify these aspects of our civilization enter into the problems to the solution of which the medical sciences and hygienic arts are expected to contribute. If the United States is in truth a great melting pot wherein the most diverse races are being fused and amalgamated, what sort of a human product is the coming generation likely to be? Is it advantageous from the biologic standpoint to permit the human evolution in our nation to proceed as in the past century, or does the accumulated experience analyzed from an impartial scientific standpoint dictate a departure from our traditional policies?

These are some of the questions that arise from a study of an investigation of the vitality of the peoples of America which Raymond Pearl[1] of the School of Hygiene and Public Health at the Johns Hopkins University has made for the Society of American Peoples of New York. From his biostatistical analysis it appears most probable that the United States, as now areally limited, has passed its period of most rapid growth of population, unless some factor that has not operated heretofore comes into play. The maximum population attainable in the course of the next hundred years is likely to approach twice our present numbers. Two hundred millions of persons will require about 260,000,000,000,000 calories per annum. As Pearl points out, unless our food habits radically change and man becomes able to live on less than the currently accepted standards of daily food fuel, the limitations of our agriculture and the difficulties of inevitable importation of one-half our requisite food units will bring the pressure of population on the means of subsistence to bear in ways that the great grandchildren of our people of today are likely to realize emphatically.

With respect to the kind of population to be expected in America at the time when a real overcrowding may be looked for, Pearl has offered some interesting speculations based on statistical facts regarding the racial changes now going on among us. It is an outstanding fact, he states, that the newly arrived foreigners rather speedily fuse effectively with the stocks already here to a degree far greater than is assumed, at least in most popular discussions of the subject of immigration and related matters. The foreigner in this country is more likely to marry an American-born person, if he does not marry one of his own race, than he is to marry some foreigner of his own race. The fertility of the foreign-born women is greatly in excess of that of the native-born. A significant biologic result of Americanization is to reduce the fertility of marriages. For each native-born woman dying between the ages of 20 and 24, the native-born women as a group produce approximately twenty-two babies; the corresponding figure for foreign-born women is thirty-five.

The farther the fusion process proceeds from fresh immigrant stock the lower becomes the "vital index," that is, the measure of a population's condition which is given by the ratio of births to deaths within a given time. Pearl has concluded:

> In general, unless forcibly prevented—which means finally by murder and sudden death—that people will inherit the earth and the fulness thereof which has habitually the highest vital index. The advocate of birth control as a solution of the problem of population should remember this, and draw from it the logical conclusion that if, for any reason whatever, he does not want the people who have the highest vital index to be the inheritors, he must be prepared to do something a good deal more violent than merely to control the birth rate of his own kind of people, which is, in practical effect, about all that he has done so far. And he must not forget that people who have a high vital index are apt as a group to be pretty good fighters, in a technical military sense.

Facing the fact "in the gigantic American experiment in human genetics" that the native population is not reproducing itself in competition with the amalgamating peoples, we need not fear a consequent deterioration of our descendants. The dominant element will be a new one, for the biometrists assure us that there cannot be anything approaching biologically pure race stocks in this country a century hence. Quoting Pearl again, the kind of people who will survive and conduct the affairs of the country, say a couple of centuries hence, when population pressure will be intense, will not be Englishmen or Slavs or Italians, but Americans of that type which has shown the greatest adaptability to the problems which life in this part of North America has presented. Why, then, need we be pessimistic about future Americans?

1. Pearl, Raymond: The Vitality of the Peoples of America, Am. J. Hyg. 1: 592 (Sept.-Nov.) 1921.

RÔLE OF BLOOD PRESSURE AND FILTRATION IN THE FUNCTION OF THE KIDNEY

For many years, medical students have listened to the rehearsal of two theories of urine secretion; but physiologists have been unable to marshal sufficiently convincing evidence to remove either of these from the field of uncertainty. Three quarters of a century ago the Leipzig physiologist Carl Ludwig attempted to explain the formation and composition of the renal secretion by a purely physical hypothesis. Assuming that the membranes containing the blood are impermeable to a number of substances, among which proteins are most conspicuous, Ludwig concluded that the pressure exerted by the blood in the glomerular capil-

laries on their walls sufficed to bring about the filtration through them of a certain amount of fluid. The protein-free glomerular filtrate was supposed to contain the blood crystalloids in the proportion in which they exist free in blood; but, as the urine ultimately secreted is by no means precisely like the nonprotein portion of blood in composition, the further assumption was made that a reabsorption of certain components from the glomerular blood filtrate ordinarily takes place during its passage along the epithelium-lined tubular structures of the kidney.

The competing theory of urinary secretion, commonly designated as the Bowman-Heidenhain hypothesis, teaches that mere filtration followed by selective absorption or diffusion is not adequate to explain the known facts. It assumes, on the other hand, that the epithelial cells of the renal structures do not serve merely as a passive filter subject to blood pressure effects. Heidenhain assumed that both in the glomerular membranes and in the convoluted tubules the cells participate in some physiologic manner by an act of "secretion," the ultimate chemistry of which remains unexplained. At any rate, the physical forces of filtration, diffusion and perhaps imbibition have been regarded by many as inadequate for a satisfactory interpretation of the known phenomena of kidney function.

Richards [1] has now brought convincing support to the filtration theory so early formulated by Ludwig, and has refuted many of the seemingly valid objections to it. In his recently published lecture on kidney function, he has reported experiments which show unmistakably that variations in the flow of urine follow blood pressure changes in the kidney with surprising uniformity. This is true even under conditions in which the blood flow and blood volume are not materially changed. The work of Richards and his collaborators fortifies us in the belief that the glomerulus filters fluid rather than vaguely "secretes" fluid from the blood. The filtration hypothesis now rests on the clear demonstration that increment of blood pressure, even when unattended by increment in velocity or volume of blood flow in the kidney, increases urine formation; and the most weighty previous objections to this conclusion can now be explained in a manner consistent with it.

Nor is this the whole story. Indications have been afforded by Richards to show that nervous stimuli and chemical substances may exert different degrees of effective influence on the afferent and efferent vessels of the glomerulus, and that this may be a factor in that automatic regulatory control of glomerular filtration which is responsible in part for the maintenance of constancy of blood composition. Furthermore, by a brilliant technic Richards has actually observed the glomerular tufts during function in the living kidney. It appears thereby that not all the glomeruli are receiving blood and are active at the same time. There may be intermittence of glomerular flow. The proof that the 2,000,000 urine-forming units in the human kidneys need not always exhibit a simultaneous functioning, one group resting while another responds to an active circulation in the malpighian tufts, permits new insight into renal behavior. It becomes easier, Richards writes, to understand how a kidney might eliminate from blood of the same composition and in equal periods of time urine of widely different composition; for a urine issuing as the result of highly active blood flow and high glomerular pressure in a smaller number of glomeruli must be different from that which issues as the result of slower blood flow and lower glomerular pressure from a larger number of glomeruli. The resorptive powers of the tubules would be effective to different degrees.

1. Richards, A. N.: Kidney Function, Am. J. M. Sc. **163**: 1 (Jan.) 1922.

Current Comment

A DEFENSE OF RAW EGGS

Although eggs and a variety of products prepared from them have long been popular in the dietary of the sick, they are nevertheless the subject of frequent debate with respect to the form in which they are presented for ingestion. Traditional prejudices regarding eggs often find expression on the part alike of patients and of their physicians. Speculation as to the degree of cooking preferable to make eggs ideal as foods often calls forth contradictory advice. To one person the hard boiled egg is reputed to be peculiarly difficult of digestion; another will insist on its innocuous and wholesome character. Raw eggs have likewise been included in discussions of digestibility. Students of gastric physiology have repeatedly demonstrated that uncooked white of egg rapidly leaves the stomach, thus differing from most protein foods; furthermore, it does not excite any noteworthy flow of gastric juice. Unheated egg white is somewhat more resistant to digestion in vitro by proteolytic enzymes than is the same product after cooking. Several years ago, Bateman [1] asserted as the result of observations on animals that the feeding of considerable quantities of raw egg white may actually lead to diarrhea with loss of some of the ingested material in the feces. On the basis largely of such evidence, he [2] warned against the use of large quantities of uncooked egg in the dietary of the sick, urging that the food be heated at least to the point at which incipient coagulation of the proteins of the whites takes place. Recent tests on healthy persons by Rose and MacLeod [3] at the Teachers College of Columbia University, New York, have failed to disclose any occasion for severe condemnation of the raw egg in dietetics. When the whites of from ten to twelve eggs

1. Bateman, W. G.: The Digestibility and Utilization of Egg Proteins, J. Biol. Chem. **26**: 263 (Aug.) 1916.
2. Bateman, W. G.: The Use of Raw Eggs in Practical Dietetics, Am. J. M. Sc. **153**: 841 (June) 1917.
3. Rose, M. S., and MacLeod, G.: Some Human Digestion Experiments with Raw White of Egg, J. Biol. Chem. **50**: 83 (Jan.) 1922.

a day were included in a simple mixed diet they were well utilized, the average coefficient of digestibility calculated for the raw egg white alone being 80 per cent., as compared with 86 per cent. for cooked whites in the same diet. The absorption varied with the method of preparation, being less for raw egg whites taken in their natural state than when beaten light. A mixture of whites partly beaten and partly unbeaten gave an intermediate value. In no case was there any sign of indigestion, such as discomfort or diarrhea, though one or two subjects found the diet slightly laxative. Since the quantities referred to may be regarded as maximal in dietary practice, one may agree with Rose and MacLeod that it seems unnecessary to emphasize unduly the difference between raw and cooked eggs, especially if the raw eggs are beaten.

ATOMIC DECOMPOSITION

Again the application of a new experimental tool from the domain of physics has opened a new field of chemistry. In a recent report to an intersectional meeting of the American Chemical Society, G. L. Wendt and C. E. Irion described their utilization of intense heat in the investigations of conditions which correspond to those of extremely hot stars; this heat was produced by means of massive electrical condensers. Whereas the chemist heretofore has been limited to a temperature of about 3,000 degrees centigrade, recently J. A. Anderson of the Mount Wilson Solar Observatory devised a method of producing "artificial lightning" whereby a temperature of 30,000 degrees could be reached. Using this method, Wendt and Irion subjected metallic tungsten to the maximum temperature—a temperature which lasts only a fraction of a second. They found that tungsten atoms, as such, were actually destroyed, and a considerable amount of helium gas was formed in the process. As yet the new process has no commercial value, because an extraordinarily large quantity of electrical energy is required to produce the phenomenon. The method consists essentially in "breaking up" or destroying the atoms used. Chemists tell us that the splitting of a heavy atom, e. g., tungsten, into a lighter one should be easier than the reverse process: the building of heavy atoms such as gold from iron is still as remote as ever. This work emphasizes again how scientific advance often is made to wait on mechanical achievement. The practical heavier-than-air flying machine was a theory until the development of the modern internal combustion engine gave power with small weight; so the demolition of metallic atoms at will, though theoretically thought possible, was not practically demonstrable until physicists had developed means of attaining temperatures of a degree never before reached. Our definition of an atom will change with the extension not only of our knowledge but also, even more, of our powers. To Sir Isaac Newton the atom was a hard, massy particle, indestructible, impenetrable. Twenty-five years ago, with the discovery of radioactivity, the conception changed, as a result of the revelation that radium decayed into totally different substances. Scientists have learned that the atom has a complex structure, a real anatomy; they have observed one atom—that of radium—change into another, although that change was beyond human control. The atom in the light of newer knowledge was then conceived as an ultimate particle which man cannot change, but which may change automatically. Now appears another extension of the mastery of human intellect over matter: It has long been known that the very hot stars do not contain the heavy elements, presumably because the atomic collisions at high temperatures are so violent as to decompose them. It was on the basis of this fact that Dr. Wendt attacked the problem, and brought to the laboratory conditions approximating those that exist on the hot stars. Atoms, it seems, can be decomposed at will, if sufficient energy is employed. It need scarcely be said that the importance of this first step lies chiefly in what may follow. Probably more than atomic decomposition will be discovered at such extreme temperatures. A detailed knowledge of the factors that determine atomic stability in itself holds more promise than one may now surmise. Possibly it is true that "we inhabit a sensuous raft adrift on a supersensuous chaos." In any case it is reassuring to know that the fundamental sciences are adding still to the possibilities of the raft, and even overcoming the surrounding ocean of chaos.

THE DEMAND FOR VITAMINS

Thus the *British Medical Journal* in its current issue:

> In spite of the fact that ordinary fresh foods are the simplest, cheapest and richest sources of vitamins, the public apparently demands to be supplied with vitamins in the form of medicinal products.

The public "demands" vitamins in pill form! Why? For the same reason that the public, lay or medical, demands many things today that it does not need—because the whole trend of modern advertising is toward creating demands, rather than supplying needs. Vitamin concentrates are being "demanded" by the public because shrewd and forward-looking "patent medicine" exploiters are using all the subtle arts of modern advertising to convince the public that it is in serious danger of vitamin starvation, and that the only hope lies in buying these alleged concentrates to make up a hypothetical deficiency. It seems inconceivable that a rational man would pay a tremendously high price for certain food factors which are already present in his ordinary diet. But he will; and advertising is the reason. Advertising campaigns such as these of the vitamins constitute a vicious circle; an artificial demand is created and then the manufacturer excuses his business on the ground that he is merely supplying a demand! As our British contemporary says, "ordinary fresh foods are the simplest, cheapest and richest sources of vitamins."

Public Health Movements Represent Private Initiative.—It has been the story of this country that most of the permanent constructive progressive movements in public health have come from private initiative and later have been assimilated into official policies and administration and later still have been so approved of as to become incorporated in the sanitary law of the community.—H. Emerson, *Hosp. Soc. Service* **4**:273 (Nov.) 1921.

Association News

ST. LOUIS SESSION

Special Railroad Fares

The Trans-Continental Passenger Association has announced that the individual lines in California, Nevada, Oregon, Washington and western British Columbia have decided to authorize a round-trip rate of fare and one-half of the current fares for the annual session of the American Medical Association to be held in St. Louis. Round-trip tickets will be on sale May 12 to 19, inclusive, and will be limited for return to June 5, 1922. They will be available only to Fellows and members of the American Medical Association, and dependent members of their families. Tickets may be purchased on presentation to the ticket agent of Identification Certificates. These certificates may be secured on request, accompanied by a self-addressed, stamped envelop, from the Secretary of the American Medical Association, 535 North Dearborn Street, Chicago.

ANNUAL CONGRESS ON MEDICAL EDUCATION, LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 6-10, 1922

(Continued from page 740)

MEDICAL EDUCATION

MONDAY, MARCH 6—AFTERNOON

The Function of the Hospital in Medical Education

DR. C. P. HOWARD, Iowa City: It is self-evident that just as one requires a dissecting room for the teaching of anatomy, or a laboratory for the study of physiology, one must make use of the hospital beds for the teaching of the clinical branches. One of the greatest advances, if not the greatest advance, in medical education during the last twenty-five years is the widespread appreciation of the absolute necessity for the medical student to come into close personal contact with the patient instead of merely viewing him from the benches of an amphitheater and listening to the teacher's more or less stereotyped lecture two or three times a week. While this clinical lecture has still, no doubt, its place in the curriculum, it occupies a decreasingly less prominent one in most of the modern medical schools.

The system of the clerkship and dresser long since followed in the Scotch and English medical schools was amplified by Osler in 1891 in the Johns Hopkins Hospital, and his methods have been adopted in many other institutions since then. In this system we see the senior student engaged in practical work in medicine, surgery and the various specialties in a manner in every way analogous to the junior student in the dissecting room or the mammalian laboratory of physiology. He is learning for himself to unravel the history of the patient, learning to feel, see and hear the phenomena of disease, and to weave them into a complete clinical picture. Here he makes for himself the blood, sputum, stool and urine analyses, and assists at any of the special examinations, as the removal of test meals and the exploratory puncture of the chest or abdomen or meninges. He learns, too, his therapy and has an opportunity to watch the course of the disease from day to day, almost from hour to hour. I tell my students that I depend more on them than even my interns to give me the data necessary for the final diagnosis in a difficult case. Lastly, the medical student first acquires a certain self-reliance when still under direction and control, instead of waiting for it to be acquired when engaged in town or county practice several years later. He also unconsciously will imitate his teacher in gentleness, forbearance and courtesy in dealing with their suffering brethren. A medical school which cannot offer this opportunity to its students is not fulfilling its proper function.

The importance of civic hospitals in large centers of population has long been realized. Fortunate is the hospital of this kind that has some affiliation with the medical school of its community. The less fortunate ones are encouraging their medical staff to offer postgraduate instruction.

The one danger that I see in the community hospital and group system idea has already been referred to by Dr. James B. Herrick in an address before this association. Another danger is the necessary use of more or less trained technicians as diagnostic aids.

We have not yet felt inclined to adopt the more elaborate scheme proposed by Dr. Hugh Cabot of the University of Michigan Medical School. Yet for several years two state laws have been in effect in Iowa which provide for the care of the indigent adults and children at the university hospital. These laws insure a mass of clinical material, on the one hand, and, on the other, offer expert help to the poor of the state. It has enabled the university hospital to expand its 125 beds of 1910 to 550 beds in 1922, without appreciably increasing the financial burden of the medical school and the university.

The Student Internship

DR. E. P. LYON, Minneapolis: In the last six months of their senior year, most of our students live at the affiliated hospitals, are part of the resident staffs of these hospitals, help do the work of the hospitals, and are responsible to the superintendents. They are taught by the university instructors who are on the staffs. They come to the medical school campus only twice a week for lectures. All the rest of the time they are at the hospitals. They learn by doing. The work is practical and individual.

When the matter of division of junior and senior classes was under consideration, we discussed the length of time the individual student, as part of his undergraduate course, might spend in residence in a hospital. We agreed that six months or two quarters were as much as could be spared from the eighteen months or six quarters of the clinical course. Moreover, a more frequent change of junior interns would be detrimental to the hospitals.

Half of the students from the close of the sophomore year proceed straight ahead for six quarters without any long vacation. There is a vacation of four weeks in September. The other half takes two vacations of three months each—the regular amount. The first division, therefore, gets six months ahead. Thus the filling of the student internship twice a year is rendered possible. It thus results that (*a*) about half of our students save six months on the medical course; (*b*) we graduate classes twice a year, i. e., in December and June, and (*c*) our hospitals are used for teaching twelve months of the year.

Our preliminary consideration also made plain that the contemplated student internship should be preceded by a clerkship of systematic and supervised character, in which the student should get some experience in the methods of examination, history writing, laboratory tests, etc. We settled on six months for this period.

In the last six months of the senior year the program calls for only six lectures a week, arranged on two afternoons. The rest of the work is elective. The student internship is the elective chosen by most of a class. We therefore speak of this time as the student internship period. Students at the end of the sophomore years may choose Division A or Division B of the junior class, subject only to a rule that students with deficiencies may not register with the advanced division. So far, Division A has averaged about thirty students, and Division B about forty.

A question of primary importance is the supervision of these students acting as interns. From the beginning we have given attention to the matter. One member of our faculty on each hospital staff has been made supervisor of student interns. It is his business to see that they are properly instructed and to examine critically the work to which they are assigned as to its educational value. All of these supervisors are "part-time" men. They are all interested in their work, but cannot give it such close attention as the full-time clinicians assigned to clerkship instruction give to that work.

The residents in the large municipal hospitals exercise direct supervision over student interns in their respective services. This is especially effective at the General Hospital, Minneapolis, where most of the residents are at the same time fellows in our graduate school. They therefore represent both the hospital and the university—an ideal arrangement.

One of the strong features of the plan is the increasing responsibility put upon the student as he progresses. As a beginning junior in dispensary or hospital clinics, he has no responsibility. As a clerk the student has some responsibility. The clerk's record in certain departments becomes the hospital record. As a student intern he has more responsibility; in fact, that indicated by the term junior intern, by which he is known in the municipal hospitals.

Of the 105 students educated under this system who answered my questionnaire, ninety-nine had the student internship, and six took other electives or research in place of it. All of the ninety-nine but three in the light of subsequent experience would again choose the student internship. One thinks he needed more didactic work and group clinics. One would prefer the more scientific atmosphere of a clinic and a well organized lecture course. One says, "A fourth year man needs more supervised work with instruction; gets plenty of practical work later anyway." Of the six who did not have a student internship, two wish they had. The others are well satisfied with the work in these cases, mostly research —which they took as a substitute.

Fifth Year Requirement as an Essential for Graduation

DR. L. S. SCHMITT, San Francisco: Since the adoption of the fifth year requirement by the University of Minnesota, which went into effect with the graduating class of 1915, nine existing medical schools have required an additional year, and ten states likewise make this an essential qualification to the practice of medicine. Five medical schools require either a hospital intern year or advanced work in a laboratory connected with the school. One school requires a hospital intern year or a year of laboratory work in connection with a clinical department. Two schools require an intern year in an approved hospital, and one school in a hospital without specifying whether it must be approved or accredited. Six states require the intern year to be taken in an approved or accredited hospital; two in a recognized hospital, and two require the intern year to be taken in an approved hospital with a rotating intern service, the standard being specified. The University of California Medical School adopted the fifth year requirement with the entering class of 1914-1915. It now permits the fifth year requirement to be fulfilled by a year in an approved hospital or laboratory, or by special work in a department of the medical school. The laboratory year may be taken at any time after the first half year, as well as after the completion of the fourth year, provided the student has creditably completed his required work in the subject in which he desires to fulfil his fifth year requirement. He must engage in work of advanced standing. It may be taken in any of the major departments of the medical school, or in the Hooper Foundation for Medical Research. In the latter he may receive a fellowship with the usual compensation.

The method of procedure is as follows: The student must first obtain the consent of the head of the department concerned or of the director of the Hooper Foundation in the latter case, and must be especially qualified to carry on the work he desires to pursue. He then registers in the dean's office as fulfilling the fifth year requirement. Before obtaining credit toward his medical degree for the work which he has accomplished, he must receive a passing grade from the head of the department concerned.

The student may also complete his fifth year requirement by an intern year in an approved hospital. The procedure in this instance is as follows: At the end of the first half of the fourth year, which in the University of California Medical School marks the completion of almost all the required curriculum, the student makes his application for an internship on blank forms prepared for that purpose. This form indicates the available internships, and contains also an agreement to accept the internship assigned to the student and to remain throughout the period indicated. The assignment of internships is directly under the jurisdiction of the medical board, consisting of the dean of the medical school, the director of the university hospital, the heads of the four major clinical departments, and the head of the department of pathology.

The various hospitals to which interns are assigned, if not directly under the control of the medical school, must agree that each student shall be under the supervision of a member of the staff of the hospital; that the year's work must be under conditions approved by the medical board of the University of California Medical School; that the hospital shall at all times conform to the requirements of the Council on Medical Education and Hospitals of the American Medical Association, and that reports shall be sent to the dean's office quarterly and with each change of service. These reports must be on forms supplied for that purpose, and must indicate the professional service in which the student is engaged, the period for which the report is made, the member of the staff to whom the student intern is responsible, and remarks concerning the nature of his professional service.

Before the fifth year was required, 90 per cent. of the students of the University of California Medical School voluntarily took a hospital year, and those who did not needed it most. Since the fifth year has been required, 47 per cent. of the graduates who fulfilled the requirement by taking a hospital year have continued their connection with a medical school or hospital for a year or more after graduation. The legal difficulty in the way of requiring a hospital year, referred to by Dodson (THE JOURNAL, Aug. 16, 1919, p. 469), can easily be overcome with the cooperation of our colleagues on the various state examining boards.

Experiences at the University of Minnesota with the Requirement of the Intern Year as a Prerequisite for the Degree of Doctor of Medicine

DR. JENNINGS C. LITZENBERG, Minneapolis: Students felt that if we require them to take the extra year, we should furnish internships. The students had previously always secured their own internships. A committee on interns, called the seventh year committee, which had been appointed by the dean, immediately set about securing as many internships as possible. They succeeded in securing 50 per cent. more places than there were graduates. From that time on we have had no difficulty whatever in securing desirable internships for our graduates.

Each student is required to take his seventh year in a hospital approved by the seventh year committee. The hospital must have more than 100 beds, must have a well conducted clinical laboratory with a trained pathologist, a roentgen-ray department conducted by a trained roentgenologist, and an organized staff of highly trained men. Every intern is required to register as a student in the University of Minnesota for his seventh year, giving the name of the hospital where he is to serve this time. We will not let our students go to any hospital which does not agree to furnish them with high grade clinical instruction.

When we send an intern to a hospital for the first time we take great pains to explain to the superintendent what are our ideas of a good internship under this plan. We explain that we do not consider the old style internship as meeting our requirements. We not only expect the men to be given every opportunity for clinical experience, but also expect the staff members to go out of their way to give the interns proper clinical teaching.

We have experienced the most whole-hearted cooperation from superintendents and staff members in giving the students the best possible clinical instruction. Not only are the interns invited to attend the scientific meetings of the staff, but individual members put forth greater effort along this line than they have ever done before.

We believe that the scholarship in the medical school itself is improved under this plan, because the students know that they must have a high grade of scholarship to have a chance to secure internships in the better hospitals. Students have told the committee that this has been a great incentive to better medical school work.

DISCUSSION

DR. JOHN M. DODSON, Chicago: There can be no question as to the value of all medical students taking a year of supervised practice in a hospital before entering on independent practice. Every student should have the internship except those that are planning lives of teaching and investigation, and it is a question whether many of these would not be better off with a year of hospital service. In those states which now require internships, the laws or regulations of the boards should be so modified as to permit the substitution of a year of advanced research work in one of the departments for those students who elect to go into a life of that sort; otherwise we shall cut off seriously the supply of men for teaching the fundamental branches. It is getting almost impossible to secure men who will continue in teaching of anatomy, physiology and the like. The question, therefore, is, How shall this internship year be administered? Shall we leave it as it was in former years to the hospital itself? This would aid a great deal if all hospitals were as well conducted and eager about this matter as are a few of them. One of the principal advantages and purposes of this method is to secure greater uniformity of opportunity for interns to get service in several hospitals. To do this, somebody besides the hospital must supervise this year, and two possibilities are open. Shall it be supervised by the state boards of medical examiners in those states in which the intern year is required for licensure? All are agreed that this is not properly the function of the state board of licensure. They are not medical educators primarily; they are not in touch with the hospitals. If it is to be supervised at all, it must be supervised by the faculties of the schools from which the young men and young women came. And so we decided as long ago as 1905 in Rush Medical College to make the internship year a requirement for graduation. It was first offered as an optional year, with the intention of making it compulsory in the future. The first class to take the fifth year was the class of 1918. The regulations drawn up for the control of the intern under the direction of the hospital and specifying the duties of the faculty as long ago as 1905 have remained substantially unchanged from that time. We have now had experience of four years with the intern year. Our plan of administering it differs materially from that in operation by Minnesota and California. The students of the senior class find their own hospitals, and we believe very strongly that this is a much better plan.

As to the approval of hospitals, we have found the list of the Council on Medical Education and Hospitals of the American Medical Association very helpful, but we are securing in our school a volume of information of a quite different type that can be secured in no other way, and that is, the testimony of the interns themselves. We ask each intern after he has served a year in an institution outside the city to write his impressions of that hospital, not so much about its equipment, its laboratory facilities and all that, but his impressions of the staff. Do they supervise and direct his work carefully? What criticism has he to offer? This letter goes into the files of each hospital in a folder of its own, and future students seeking internships have free access to these files. They can find out just exactly what their predecessors from Rush Medical College found to be true of these hospitals, and with very rare exceptions the testimony of the students received in that way is taken at its face value and as evidence of good faith and good judgment.

DR. ARTHUR DEAN BEVAN, Chicago: I am thoroughly converted to the importance of the intern year requirement, and feel that it is the next step that should be generally adopted by all our better medical schools.

DR. FRANK BILLINGS, Chicago: The proposition that Dr. Lyon presents as having been put into practical operation in the University of Minnesota Medical School has interested me very much, because last summer, as the member of a committee making a survey of conditions there, I had an opportunity to see something of its workings. The students themselves in the General Hospital at Minneapolis reported that they liked the work; that they had assigned to them certain patients; that they were obliged to work out the examination of a patient physically as well as to do the laboratory work. It is not an innovation; it simply carries over the clerkship of the junior year into the senior year, with a longer residence in the hospital. There is nothing offered in medical education that is better than the clerkship. The difficulty lies in the clerkship during the junior and senior years. The curriculum is so crowded that it gives no opportunity for the clerk to work in wards. He does not have more than one or two hours available any day in the week in which he can go into the wards. We have so crowded our curriculum with lectures and clinics that there is no available time left for the clerk in the wards.

If we give the right kind of education for four years during which the student is taught to use his brains, his hands, and how to handle the instruments necessary in diagnosis and in treatment, then the internship is of the greatest value to him, and it is an essential part of medical education.

DR. GEORGE M. KOBER, Washington, D. C.: From the papers and discussions, I think we may assume the conclusion is inevitable that as long as internships are desirable, they ought to be taken before graduates become doctors of medicine. I am a thorough convert to the belief that it is extremely desirable that no man shall receive the degree of Doctor of Medicine until after the completion of an internship.

DR. JOHN A. WITHERSPOON, Nashville, Tenn.: I take it that no one questions the great advantage of the hospital year to the young medical graduate. There is only one thing that I have been concerned with, and that is the length of time and the age that our young men are being turned out to practice medicine in this country. We must give some thought to the fact that, with our premedical two years, our four years, and then internship, many of our men are from 27 to 29 years of age before they begin the duties and responsibilities of practice. How to shorten the time and get these young men into professional work earlier is an important thing which must be considered by the educators of this country and by the Council on Medical Education and Hospitals.

In regard to undergraduates, during the war we had exactly the state of things Dr. Lyon has described. Necessity forced us to put senior students and even junior students into hospitals. We had no interns. Many times during the epidemic of influenza in Nashville, when we had great government works there, with 60,000 employees, 150 men were dying daily, and we had to send out students as nurses to help these people out. That kind of thing led us into furnishing undergraduates for hospitals which we have had to keep up ever since.

DR. I. D. METZGER, Pittsburgh: I have been interested in getting the reaction of the college men on intern training, and, representing the State Board of Pennsylvania, which has had experience for eight years in intern training as a requirement before the applicant may take the examinations, I wish to relate briefly my experience. As Pennsylvania insists on a man's having had his full medical training before he enters on internship, I cannot therefore look kindly on the plan submitted by the University of Minnesota. Knowing, as we do, the type of intern training and the undergraduate training that is received in the hospitals, we cannot think that that training is equal to the training given by the regular undergraduate work in a college. We think that one year of intensive work under supervision in a hospital is of great benefit to every intern. The state authorities should have control of the hospitals, and the hospitals should be responsible to the state authorities. If the state says an internship shall be required, the state has a right to demand the type of internship given and has a right to supervise the hospitals of the state.

DR. T. J. CROWE, Dallas, Texas: State boards are operating under statutory qualifications. According to the Minnesota plan, if a man is graduated in three years with the degree of M.D., he would not fulfil the statutory requirements of many states that require four full years.

TUESDAY, MARCH 7—MORNING

Professors and Clinical Professors of Clinical Subjects

DR. CHARLES P. EMERSON, Indianapolis: My plea today is for a better appreciation of the clinical years of the medical course, and the questions I would ask are: Should these really be clinical years, and, if so, what are the considerations which should direct us in our choice of the heads of our clinical departments?

What are the proper qualifications for a real clinical professor? First, a thorough training in the premedical and preclinical sciences and a proved ability as a laboratory research worker in at least one of these scientific fields. The laboratory is the lever which has pushed medicine forward and which must continue to push it forward. If it were to stop pushing, then medicine would become again empiricism and formalism. Each student should do some research work since each of his future patients will in some degree be a research problem and only the man with the research type of mind will recognize the individual needs of his cases. But are intellectual brilliancy and proved research ability, essential though they are, enough? They may be enough for a professor but not for a clinical professor. The art of medicine also is necessary. This is possessed by some, but not by all, as a natural endowment which can be developed by experience. This it is which the students look for in their clinical professors.

But there is a third quality which the professor may not need, but which is just as necessary to the clinical professor as are the foregoing two and possibly just a little more so. I refer to that sympathy for the sick patient, that love of fellow man which originally prompts him to dedicate all his powers to this profession, whatever the remuneration may be.

Some preclinical teachers would seem to believe that clinical medicine is merely the application at the bedside of the preclinical sciences, and that the student who has mastered these sciences actually has already covered a definite and a considerable portion of the field of medicine. The same teachers, however, demand as preparation for their preclinical courses considerable premedical science, but they certainly refuse to grant that these overlap. On the other hand, I would maintain that while the man well trained in the preclinical sciences can gain for himself a much wider and firmer grasp of clinical medicine, yet there is no real overlapping of these two fields. Others would appear to be even more radical than these and to consider ward work as lower in grade than laboratory work; that it is a distinct step downward. We have even heard them say in effect, "Do your laboratory work well for six years and you can get all the clinical side of medicine worth having in six months."

It has been affirmed by older men in medicine that their young assistants and hospital interns show a definite lack of sympathetic interest in their patients; that they are rather cold blooded propositions in their early practice. Of course, some may protest that "even if this is true the schools are not to blame." But if it is true should we not make carefully planned efforts to counteract it?

Finally, is it not probable that the relatively strong emphasis laid during school days on laboratory tests and research work, and the relatively little emphasis laid on careful ward work explain in part at least the flood of vaccines, serums, nonspecific proteins, internal secretions, vitamins and dried organs with which manufacturing plants have deluged this country? Our indifference to this evil and, much more, the amount of such stuff which our recent graduates certainly prescribe are to my mind sufficient evidence that our medical schools need fewer "professors" and more "clinical professors" who consider the wards as the most sacred ground on which the medical student can tread.

DISCUSSION

DR. ALEXANDER PRIMROSE, Toronto: A scheme which we have inaugurated in the University of Toronto, which has been in operation in the Department of Medicine for three years, and more recently instituted in the Department of Surgery, briefly is this: Looking forward to the training of men for clinical teaching, we put before the junior men general practice or the practice of a specialty, and recognize that their destiny is practice and not teaching, the object being that when a man gets into practice he will be available for a position on the university staff as a clinical teacher. We have men trained who will proceed to a higher degree in medicine. They will be capable of taking examinations for that higher degree three years after graduation. Let us suppose that a man who has the requirements proceeds immediately after graduation in the ordinary routine of hospital service as a junior intern. He rotates between the services. There is nothing peculiar about that particular year. After that year, however, he will be qualified as an ordinary resident. We have examined three men of this type at one time in medicine, gynecology and obstetrics, and surgery. A man not qualified as a senior resident must take one year in a laboratory designated for the purpose and approved by the instructors. It may be pathology, bacteriology or biochemistry. He must have one year of intensive training during which he is doing research work. He is then eligible for a position as senior intern. In addition to his hospital appointment as senior intern, he is a fellow in his department in the university, and receives a salary of a thousand dollars a year. This man is eligible at the end of three years for postgraduate work, to take a higher degree in medicine, such as master in surgery. After that we have not done with such a man. We are still looking forward to the training of men getting into practice, doing clinical work, who are eligible for the university hospital when they are not capable of supporting themselves. We appoint such men and give them $2,500 a year as full time men in the wards. They are allowed to do a certain amount of private practice. A man in surgery, for instance, can do private practice. In the first year he is trained so that during that time he has facilities in the hospital and laboratories to do research work. The object is to train these men in specialties more particularly. In the meantime, we have provided training for such men in medicine, surgery, gynecology and obstetrics. Our opinion of such a scheme is that it will in the future give us our hospital staffs composed of men who have had the requisite training along the line Dean Emerson has suggested.

Introduction of Public Health Information Into the Undergraduate Medical Curriculum

DR. HANS ZINSSER, New York: The protection of the public health is a cooperative task. A fully developed organization for the control of public health requires the collaboration of administrators, statisticians, economists, engineers, lawyers and specialists in the various laboratory sciences and clinical branches of medicine. That there has been an increasing demand for highly trained specialists in public health has already been fully recognized, and the need is being answered by the splendid foundation for schools of public health started in recent years, especially at Johns Hopkins and at Harvard. The movement for the training of such men and women is being fostered by federal and municipal agencies, by lay organizations and by industrial interests. In the education of such specialists it is generally admitted, particularly by such leaders as Whipple, Welch, Edsall and others, that preliminary medical training is necessary for those who wish to submit themselves to the most complete discipline for this profession. However successful in its effect on general public health movements the education of such leaders and specialists may be, the fact still remains that the entire structure of organization for the purposes of preventive measures must remain ineffective unless the practicing medical profession is entirely alert to its cooperative obligations and capable, by training, of meeting them.

It will probably be found necessary for the complete accomplishment of a public health program in the medical curriculum to require attendance at a lecture course of not more than twenty or thirty lectures on public health administrative problems, social service, quarantine and kindred subjects, in which the relationship of the practicing physician to existing public health organizations may be presented.

To fulfil the functions which we have indicated, it is not necessary for the physician to be a trained public health administrator, statistician or epidemiologist. He must understand the purposes and parts of health department organization and know the functions of the ramifications of the various public health agencies so that he may properly comprehend all the possible opportunities for cooperation on the part of the physician, the reasons for their existence, and their legal and sociological aspects. Apart from a relatively small amount of time devoted to these purely public health matters, practically all the rest of his public health education may be dealt with as a part of the courses already prescribed for him as a student of medicine. Indeed, the purposes which we have in mind will be best served by such a treatment of the material, rather than by a separation of aspects of prevention from the etiologic, diagnostic or therapeutic discussions of any branch of medicine. To some extent this implies a reeducation of medical teachers.

There is no course given in a modern medical school in which the facts presented are not in some way important in their bearing on prevention. This is less the case in such subjects as the purely morphologic ones than it is in subjects like physiology, bacteriology and the clinical subjects. In all of them this element exists, and in all of them the preventive side can be so coordinated with other aspects of the problem that it will never again be separated in the student's mind from the problem as a whole. In a reorganization of the medical curriculum, I would earnestly urge that not only the matter of redistributing time and actual material taught be taken into serious consideration, but also in every subject the teaching staff attempt to include preventive considerations as a definite obligation in their teaching. In our own school we have been permitted to coordinate the teaching of immunology with bacteriology, and in a short course of coordinating lectures to point out the bearing of the facts derived from these two disciplines on preventive measures.

In medicine, apart from the obvious discussions of prevention and etiology already included in the instruction of many of the schools, the basic principles of social service and public health nursing can be included in the dispensary work. Isolation, quarantine and much epidemiologic information, as well as the organization of hospitals for infectious diseases can be dealt with in the teaching of these conditions. In this particular case most of our medical schools are considerably short of actual hours spent in the instruction of the diagnosis of infectious diseases; for it is perhaps in the rapid diagnosis and in the first measures of isolation taken by the physician who first sees the patient that we find the most obvious and serious defect of cooperation of the physician with public health organizations.

In the reorganization of the medical curriculum, it is not so much an alteration of the material taught as a modification of the point of view, a fostering of a habit of mind which will induce the teacher, and consequently his pupil, to scrutinize the ultimate cause of the illness, to trace it to the defects of habit, misfortune, crowding, poverty, etc., from which it springs, and contribute his share to its correction, so that others in the particular little group for which he is responsible may not suffer in the same way. Thereby he becomes a public health officer.

If this principle has once been grasped, it will gradually lead to a rewriting of textbooks of the medical sciences. In writing general treatises on bacteriology for medical readers, it has been our own experience that the pressure of logic has forced a gradual inclusion of some clinical and much sanitary information. The same thing should be true of all other branches, except perhaps the purely descriptive books of anatomy and of technic. It is only another phase of the general awakening of a sense of community responsibility which has changed the point of view of other professions which is leading all thinking men and women to look about them for opportunities to increase their powers of helping their fellows.

DR. ALEXANDER C. ABBOTT, Philadelphia: I endorse heartily the argument that Dr. Zinsser has made in favor of the development of a mental attitude. I would not for a moment put anything in the way of advancement of our knowledge about investigation in this field, but I unhesitatingly say that if the medical profession as represented by the group of men in this hall now, were faithfully to employ in their everyday work the knowledge that we now possess, we should in a short time make surprising advances in public health that are not being made at this moment.

DR. DAVID L. EDSALL, Boston: I would not in any way belittle diagnosis. In the teaching of medicine and the various clinical branches in medicine we have in a sense exalted diagnosis. Diagnosis has a purpose, but we frequently stop, and the whole teaching of medicine stops largely at diagnosis. There is one thing that is far more difficult and far more important than diagnosis, and that is etiology. If you know the etiology of a condition, you know very much more what to do with the case. If the main purpose of medicine is really the alleviation or cure or prevention of disease, there can be no question that in the teaching of medicine there is still maintained almost solely the whole attitude of individual medicine without regard to the community. All intelligent physicians know that is not medicine at the present time. The teaching of medicine has not kept pace with the actual knowledge that medical men have as teachers or otherwise. For a long time I have been impressed with the fact that in the teaching of clinical medicine and clinical branches there are two things which are the end and aim of medicine which are the least attended to. One of them is the actual treatment of disease, for where we have the usual medical curriculum the treatment of disease, as well as the clinical branches, receives far less attention than any other subject, because it gets crowded out, and the other is the prevention of disease.

DR. JOHN A. FERRELL, New York: It remains to be seen whether or not the medical profession is going to retain the leadership that it has exercised heretofore in the field of preventive medicine; it should retain this leadership, but where there is leadership there is responsibility. Our health boards, state municipalities, etc., are largely composed of medical men, and in considering measures with respect to public health and the selection of public health workers who are competent, the physician is entrusted with the responsibility which he should be capable of discharging. Moreover, in the past, the public health work of the country was for the most part carried on by physicians who gave only incidental attention to public health work; and, as the importance of this work gradually grew, they gave up the practice of medicine and became the health officers of today. The measuring rod of progress in the field of public health is the morbidity and mortality statistics. If these are not carefully collected and reported by physicians, we cannot determine from our conclusions whether or not we are making progress that is trustworthy. The physician, then, has a real responsibility in the field of public health if he is to retain that responsibility, and should be prepared to exercise that leadership; and if he is not taught the elementary principles of hygiene and public health in the medical schools, he is not going to be fit for that responsibility.

DR. JOHN M. DODSON, Chicago: In line with what Dr. Emerson has said, we need to emphasize to students constantly what he has stated and select students with character who will realize that the medical profession is a profession of service. If it is not that, it is nothing, and that service means prevention wherein the largest possibilities lie. Without the cooperation of every physician in the community in reporting disease, in assisting in the prevention of disease, the public health officer is practically helpless. I should like to stress also the importance of the physician as a personal hygiene instructor and individual. After all, these are two great divisions of community hygiene, which means those things which the community does for its people, and personal hygiene in which the larger possibilities lie in the direction of teaching the individual how to live and what to eat, correcting his bad habits; and I believe that we shall come to the time when the family physician will be, for the most part, the family health officer, and his main business will be to see that his families are kept well. We are making more progress along that line than we sometimes realize.

DR. GEORGE M. KOBER, Washington, D. C.: Hygiene is not an independent science, but it is the application of bacteriology, epidemiology, physiology, sanitary chemistry, sociology and many other factors. There is unquestionably a distinct gain to be had when professors of bacteriology take up parasitology and emphasize the etiology of diseases as well as their prevention and their cure; thus at an early stage in medical education interest and enthusiasm will be stimulated in preventive medicine.

DR. JOHN G. FITZGERALD, Toronto: We have made a definite provision in the medical curriculum for medical students to get an insight into the work of the health department. After they have received a course of didactic instruction and a certain number of demonstrations, they are divided into groups in our six years' course and assigned to health departments. In that way we feel that they actually get an insight into the work of these departments which they could obtain in no other way.

Teaching Facilities: Report of Committee on Equipment

DR. J. T. MCCLINTOCK, Iowa City: From the standpoint of medical education for the undergraduate, the teaching facilities must be of such a character as to make it possible to carry out the established curriculum in the most practical and advantageous manner. The facilities should be such as are helpful in impressing on the mind of the student the things he should know, to provide means for teaching the necessary technic. Yet they should be of such a character as to conserve the student's time so far as possible by relieving him of unnecessary routine and permit of greater attention to the essentials.

The rapid growth of the medical sciences has overwhelmed the teacher with a mass of information which appears to him as necessary for the student to obtain. Yet, it is generally recognized that the aim of proper teaching not only is the impartation of information, but also that it must encourage and develop so far as possible in the student the qualities of originality, initiative and resourcefulness, together with his power of observation and interpretation. What seems to be needed, therefore, is a more careful selection of the facts which are necessary for the student to acquire and the alteration of old and the introduction of new methods which will encourage and develop those qualities which, if gained, will insure the student's independent growth in medical knowledge.

Interwoven with the curriculum as a factor in determining the teaching facilities is the adequacy of the teaching staff. While it stands to reason that a certain amount of knowledge must be acquired by the student, the method of imparting this information in an acquirable form will depend on the ideas, the resourcefulness, and the experience of the instructors in charge. Few methods can be said to be universally successful. The facilities and equipment must vary in detail, and a standard which does not permit of sufficient variation to allow for reasonable changes in teaching methods is detrimental rather than helpful.

Having once determined on what the proper teaching facilities should be, then the liberality of the financial support will largely determine the extent to which the standard set will be reached or excelled.

A more vital problem than mere expense now lies in the complete duplication of fundamental laboratories in the clinical departments. In the laboratory branches lies most of the science of medicine, while in the clinical years is the art of medicine. Most of the advances made in recent progress have been based on and are the results of the investigations carried on in the sciences of medicine. This being the case, it may be quite natural for the clinical departments to desire to have attached, under their direct supervision, complete laboratories. It has been strongly recommended that the laboratory departments teach their subjects from the standpoint of pure science. To such an extent has the introduction of laboratories gone—the working laboratory of the hospital is not here considered—that it is not uncommon to find clinical departments in the same institution each having its own fully equipped chemical, biophysical, bacteriologic and pathologic laboratory, each in charge of trained laboratory specialists. It only requires a little enlargement and expansion to handle the preclinical course in each one of the several departments.

DISCUSSION

DR. HENRY PAGE, Cincinnati: Just as we have found out in medicine that the cause of disease is often, if not usually, the result of human contacts, so we may find in methods of cure of disease in the same human contact the best method of approach to the questions under discussion. The remedy for most of the troubles we have been speaking of today can be approached from the point of view of the late Viscount Bryce, who said that there is no human problem that cannot be solved if we get closer together. In college education, if we carry that principle deeper, we may find the answer to some of the questions we have been trying to solve in this meeting. The loss of contact between physiology, chemistry, anatomy and the clinical subjects can be solved by getting a closer human contact between these departments.

TUESDAY, MARCH 7—AFTERNOON

The Cost of Medical Education to the Student

DR. IRVING S. CUTTER, Omaha: Figures are available as to the cost of medical education from the standpoint of the medical school, and constitute a part of the records of the Council on Medical Education of the American Medical Association. A questionnaire was devised which was mailed to all students in each of the four medical years of the Universities of Indiana, Iowa, Maryland, Michigan, Nebraska and Virginia, the Medical College of Virginia and Syracuse University. This questionnaire was printed, a stamped addressed envelop enclosed, and the student urged to supply reliable and accurate data, consulting the source of his funds and checking back through check stubs, etc., in the event that he had kept no accurate account of expenditures. Rosters of the several medical schools covered were obtained through the courtesy of the Council on Medical Education. The schools selected covered a fairly wide range as to type. Of the state universities, Virginia, Iowa and Michigan have located the medical school at the seat of the university and in towns of small size. Syracuse was selected as representative of a middle state institution outside New York City. The Medical College of Virginia, located in Richmond, a city of 171,000, was selected as affording comparison with the University of Virginia, located in Charlottesville. Between 50 and 60 per cent. of the questionnaires were returned. In no case were less than 40 per cent. returned, and this only from one school. The compilation, therefore, is based on more than half the total enrolment for the session of 1920-1921 of the eight schools named. Schools in New York City, Boston, Philadelphia and Chicago were purposely omitted from the list, as it is the intention to group these schools at another date in a separate compilation.

Much care was evidenced throughout on the part of the individual student in completing the questionnaire. In many instances, supplementary remarks were made by parents or guardians, and slight discrepancies in the student's estimate corrected. In some instances the questionnaire was filled out entirely by parents to whom the blank had been forwarded by the student addressed. Approximately one third of those replying requested that they be notified as to the results of the study.

Averages of totals from the several schools show surprising uniformity, although between the highest average—Michigan $1,027.77—and the lowest average—the University of Indiana at $787.93—there is considerable "spread." The high annual average of Michigan is due to higher averages for table board, textbooks, instruments and recreation. The low annual average of Indiana is accounted for by a lower outlay in the items of recreation, clothing, lodging, etc., in spite of the fact that table board is higher in Indiana than in three other schools. Wherever totals were found to fall much below the general average for a given school, usually some expense abatement will be noted, such as living with parents or relatives where no charge is made for board or room,

or serving as undergraduate intern, hospital orderly, hospital druggist, etc. In such instances the totals fail to include the items of board and lodging. When the students live at home, the total is more than $200 lower than the average for the school in question.

One of the most interesting sidelights on the cost of medical education is the comparatively large number of students who are earning nearly one third of their total annual expense. In three schools, Syracuse, Nebraska and Indiana, more than 60 per cent. of the students replying to the questionnaire earn something during each medical year. The general average shows what 45 per cent. of all students replying from all schools are earning. The average earnings a year of all working students is $268.84, or approximately $30 for each of the nine months. This $268 constitutes 30 per cent. of the student's total expense. In other words, a little more than 40 per cent. of all students replying earn nearly one third of the total annual expense. It would seem that the larger cities afford numerous opportunities for student employment, although working students in the University of Maryland average only 25 per cent. Some schools discourage and even forbid outside employment on the part of freshmen medical students.

As a rule, the junior medical year is the most expensive. This is true of Iowa, Maryland, Michigan, Nebraska, Syracuse, and the Medical College of Virginia, while at the University of Virginia the sophomore year, and at the University of Indiana the freshman year show peak costs. One should keep in mind the fact that the estimates are for the year 1920-1921, when costs of table board, lodging and clothing were probably on a higher level than at this date. There has been a general reduction this year in these three items of from 15 to 20 per cent. under the figures of 1920-1921. This general lower level undoubtedly prevails over the country, and questionnaires sent out at this time would show comparative results. The item of medical fees is bound to increase rather than decrease.

On the whole, the study would appear to be worth while from several points of view: The figures returned show every evidence of care on the part of the student as to accuracy. The variation in the group of schools chosen demonstrates that students may spend much less than they usually regard essential. The number of students who are earning at least a part of their yearly expense appears to be larger than one might reasonably expect, and the amounts earned average for all students employed $30 a month. Students contemplating the study of medicine are offered the experience of approximately a thousand students. The general average obtained represents in all probability the annual expense of a normal college student who gets the most out of college life—professional, cultural and social.

Liberalization in Medical Education

DR. A. C. EYCLESHYMER, Chicago: The products of medical schools may be considered as belonging to three principal groups: the practitioners, the investigators and the teachers. A survey of the medical profession at large shows that its eminent men usually may be placed in one or the other of these groups; sometimes in two, but rarely in three. The group of practitioners comprises those whose primary interests are in the alleviation and cure of disease. The group of investigators includes those whose deepest interests are in the causation and prevention of disease. The group of teachers contains those whose principal aims are the dissemination of the methods adopted and the results achieved by the practitioners and the investigators. Lister, Pasteur and Osler typify the groups.

A few decades ago, the country demanded and the schools furnished, for the most part, but one type of practitioner, and that type was the all around practitioner. He was obliged to know something of medicine, surgery and obstetrics, together with dentistry and pharmacy. In addition to these, he was expected to show proficiency as a veterinarian. The conditions of today are so different that the all around practitioner of today would have been a specialist fifty years ago.

The ambitious young physician of today who contemplates a career as a specialist dispenses with this hibernating period and seeks, instead, the live atmosphere of the hospital, an assistantship to the master, or a fellowship in some of our great foundations. The rural districts and small towns will be obliged to adopt something of the same methods that they long ago adopted in securing churches, schools and factories; they will be obliged to build and equip hospitals if they hope to obtain modern medical service. With the hospital comes the staff which, in turn, forms the basis of the group clinic. Instead of the general practitioner making a complete diagnosis, there is a group of collaborating clinicains, each of whom is an expert in his particular field. The rapid development of the group clinic is creating a situation which must be recognized by both the profession and the schools.

Each patient presents a problem, the solution of which is more difficult than that in almost any other field of science. While every medical problem must be approached through the avenues of physics, chemistry or biology, the physician is often baffled at the very beginning of his work by the fact that he is unable to determine which will aid him most. Often he finds that no one of these sciences will solve the problem but that all are involved. Physics may explain the mechanism of joints and muscles; it may aid us in the interpretation of the effects of light, heat, electricity, osmosis, pressure, etc., on living tissues; but it does not explain nerve impulse, sensation, memory or thought. Chemistry may teach us the rates of protein, carbohydrate and fat metabolism in health and disease; it may help us to know more of the precious vitamins and hormones, but it does not tell us why one child resembles the father or mother, physically and mentally, while another child does not. Biology may aid us in solving this problem; but she, too, is extremely jealous of her secrets. She readily acknowledges that the process of fertilization is essentially the same throughout the animal kingdom, but she teaches us that the processes of regeneration are entirely different in different forms, and cautions us not to infer that a new leg will grow out from the stump of an amputated one in man, as it does in some of the lower animals. She teaches that the organs of seeing, of hearing, of smelling, of tasting, of feeling, are the organs through which these sensations habitually are received. But she warns us not to infer that the loss of one of these special sense organs means an entire loss of that special sense.

One of the greatest needs in our medical schools of today is the encouragement of students to devote their lives to the study of the causation and prevention of disease. It becomes more and more apparent, as set forth last year by the committee on graduate work, that the medical schools must give opportunity and encouragement for men to develop as research workers. We need no longer argue that reproductive scholarship must be supplemented by productive scholarship. We accept the established fact that the investigative spirit must pervade the atmosphere of the medical school.

How far we can organize research is a question. There is no doubt that to some extent we can create the investigative spirit. At any rate, we can help the young man who evinces this spirit; we can give him time; furnish him with apparatus and books; point the way to fields of investigation; discuss his problems, and help him in his experiments. We cannot dominate him or restrain him. We cannot force him to work independently or in cooperation; this must depend on his bent, his personality, his individuality—genius cannot be organized.

Those of us who come in contact with these men as they enter upon the study of medicine are impressed by their differences in concept, habit and training. He who comes from the land of mighty oceans, forests and mountains thinks in larger terms than he who comes from the truck farm. The boy who is reared in the highly commercialized districts of a great city regards an education in quite a different light from the one who is reared in a college or university town.

The method of the medical school is the curriculum; around it centers, to a large extent, the resources of the school, and through it are expressed the principles and concept of medical education. The fixed curriculum of half

a century ago will not meet the conditions of today, yet, in principle, it has remained unchanged. Our national organizations dealing with medical education have recognized and emphasized the need of a more liberal curriculum, but have not adopted measures that materially assist the medical school in the development of such a curriculum. The fixed curriculum is so deeply rooted, so widely spread and so thoroughly fostered by standardizing bodies and educational institutions that state examining boards are rapidly adopting or creating such curriculums as the basis for medical licensure.

The day is not far distant when the schools must either incorporate in their curriculums the particular requirements of each state board curriculum or find that their graduates are not qualified to practice in these states. To incorporate these requirements means an enormous time expansion, and this is impossible. The one obvious solution is the creation of an elastic curriculum. Beyond the adjustment of the curriculum to meet these perplexities, it must be adjustable to instructional and clinical resources. It must anticipate the ever changing conditions in the growth of medical science, and above all, it must provide for collective teaching, cooperative study and individual study.

The spirit of cooperation between faculty and students in medical training is one of greatest value. To develop this spirit, we should determine as far as possible the special assets of each student at the time he enters the medical school, and ever keep in mind his adaptability for certain kinds of work. Much can be learned through contact afforded by laboratory work and through the seminar. This should be supplemented by a knowledge of his home life, his living conditions, his social habits, etc. Let us give the student opportunity and encouragement to seek truth wherever it can be found. In bringing truths together he not only builds for himself but also increases the common fund of useful knowledge. Beyond and above these and all unknown to him, he helps to build a great fund of knowledge which will illuminate life in the years to come.

DISCUSSION

Dr. George M. Kober, Washington, D. C.: In our earlier studies of the curriculums of different medical schools, we found some of the best schools were particularly strong in the laboratory branches but wofully deficient in the clinical branches. We had every reason to assume that this depended either on the character of the teacher or on the amount of time and emphasis placed on these studies, and we concluded that there was really need to establish certain minimum requirements, so that the average student could devote so many hours to the study of various departments in proportion to their relative importance. Our object is to produce educated general practitioners capable of recognizing disease and well trained in methods to effect a cure.

Dr. William Keiller, Galveston, Texas: If you are teaching medicine from the point of view of the anatomist and the pathologist and biochemist, you must say to your students, You have learned anatomy, pathology and biochemistry, and now you must apply this knowledge to the clinical case. What is applied anatomy? There is no anatomy that is not applied anatomy. There is no pathology that is not applied pathology. We are not teaching students to become specialists, for 75 per cent. of the men we are teaching are going to become general practitioners, and they ought to have a general view of the whole subject.

Dr. W. F. R. Phillips, Charleston, S. C.: Our curriculum at present comprises approximately 3,600 hours expressed in percentages, and it permits of variation in any of the subjects to suit the individual teacher. Our curriculum today is our measuring rod, and we cannot determine the qualifications of individuals unless we have fixed data to go on.

Dr. E. C. L. Miller, Richmond, Va.: Our medical students come to what they are going to be largely in spite of our training, and it does not make so much difference what they get from us in the way of facts as it is that they get the right spirit. If they get the spirit of being students and carry that spirit when they get into their work, so that they may study anatomy, physiology, etc., the rest of their lives and not feel they have finished their education after graduation, we will turn out students that will go on indefinitely, and the details we give them in the class room are relatively unimportant.

Wednesday, March 8—Morning

MEDICAL EXAMINATIONS AND LICENSURE

Drifting

Dr. David A. Strickler, Denver: Following the plan of previous years, we sent a questionnaire to the chief executive officer of every state board of medical licensure in the United States, irrespective of whether or not members of the federation. The purpose at this time was to make a study of conditions of licensure of drugless practitioners of the healing art. The following questions were asked:

1. (*a*) What are the essential features of licensure in your state? Single, duplicate or multiple boards? (*b*) What limitation, if any, in what they may do under their license? (*c*) What success do you have in their prosecution? (*d*) How rapidly do they increase? (*e*) Is there any present effort on their part to change the law?

2. What, in a few words, is your suggestion of the best practical means of maintaining a high standard of licensure which may be made applicable to all?

3. What do you suggest as an appropriate subject for discussion at our meeting in Chicago?

I shall not at this time attempt to analyze in detail the answers to these questions, but there are certain facts so generally recognized by all men of experience in administering medical practice acts or in efforts to establish adequate educational standards for licensure that I deem them worthy of serious consideration by this body, and I now present them in the hope that some plans may be evolved to correct a very unfortunate condition.

New York, with a single examining board, requires osteopaths to pass the same examination required of candidates for medical licensure, but they are not permitted to give drugs or perform surgery with instruments. In answer to Question 1 (*c*) What success do you have in their (the drugless healers') prosecution? Answer: "None at all." (*d*) How rapidly do they increase? Answer: "As rapidly as English sparrows or rabbits or any other pest." (*e*) "Yes, the chiropractors are continually demanding a law which will give them a legal status and a board of their own."

Pennsylvania answers these questions:

1. (*a*) A single board composed of medical men with drugless therapy under supervision. (*b*) Drugless healers limited—not permitted to do surgery or give drugs. (*c*) Prosecutions difficult. Jurors hard to manage. Illegal practitioners fear law very slightly. (*d*) Apparently increasing very rapidly, but few apply for license probably because they cannot qualify under the law.

These two great states, having single boards of licensure with standards quite up to the average, tell the story of nearly all states having single boards. States with multiple boards differ mainly in that, having no jurisdiction over the drugless healer, they have had no experience in his prosecution. States which claim greatest success in prosecution are found to refer to court and not jury decisions. Michigan answers: (*c*) "When indictment properly drawn and evidence warrants, the judge instructs jury to convict in nine cases out of ten."

This, if generally applicable, might solve many of our difficulties in administration, but I am advised by a Colorado lawyer that such instruction would violate the right of trial by jury guaranteed by both the federal and state constitutions, and would constitute reversible error. The court may instruct an acquittal but can never direct a conviction.

In our attempts before the legislature to have a bill passed which shall require of the applicant, for a license to practice the healing art, an education in the sciences commensurate in a reasonable degree with the responsibility assumed in practice, we again meet with an indifference, if not a definite antipathy which is quite incomprehensible on the basis of

honest intent and fair dealing on the part of the medical profession.

It is not difficult to have a law passed which will require of the medical man adequate educational qualifications, provided the cultist shall be given a board which may license on qualifications he may predetermine. The average legislator seems to view the matter in the light of give and take. He may give the medical profession what it wants, provided the cultist may have what he wants. In other instances, he may know something of the value of a scientific education, and yet have no comprehension of the subject from the standpoint of conservation of human life.

The cause within the medical profession which I look on as having more to do with the distrust of the legislators and the people in general than all others put together is the spirit of antagonism and open hostility shown by members of the medical profession to any therapeutic measures, theory or practice which may be advanced through other than its own approved channels.

To meet this condition, I recommend the creation of a commission of capable scientists who shall be selected with great care as to their fitness for the task assigned, which shall be that of ascertaining the facts relative to clinical results of any method of treatment in selected cases. Advocates of a given method of treatment should be permitted to select the class of cases to be treated. The commission should then make a thorough clinical study of the case including laboratory, roentgen-ray and pathologic findings.

I should like to offer two suggestions which, if followed, I believe would go a great ways toward solving our problems in legislation and administration of medical practice acts: 1. The organization of a strong central body of national scope with a capable executive head, and an active field secretary to collect and disseminate through the public press, and otherwise, all data which may serve to educate the people with relation to scientific research, public health matters and on the efforts of an altruistic medical profession for better conditions of licensure. 2. The creation of a commission of capable scientists to ascertain the facts relative to clinical results of methods of treatment which have gained wide public recognition, so that the truth may be known and utilized in the interest of humanity. Since our effort is to establish educational standards for all who would practice the healing art, and since the motives of the medical profession are so seriously questioned, it seems to me that there are two measures that might be considered and furthered by this body in which our motives cannot be justly assailed.

1. That no educational institution organized for the purpose of granting professional degrees should be permitted to operate in the state without showing adequate funds, facilities and standards to justify such operation as measured by established educational standards and determined by educators.

2. A general law providing that no one who has not had a preliminary education equivalent to two years in a standard college or university may be admitted to an examination for a license to practice the healing art in any of its divisions; such educational qualifications should be determined by men of academic training who shall not be physicians.

Reciprocity Problems in the South, with Particular Reference to Special State Licensure Requirements

DR. K. P. B. BONNER, Morehead City, N. C.: Reciprocity was adopted but a short time before it became necessary to surround this privilege with certain restrictions. The unworthy and immoral physician is just as much at liberty to make application for reciprocity as the most eminent specialist; in fact, owing to these faults, he is often compelled to seek a location remote from where he is known. These special requirements are primarily intended to differentiate between the competent and incompetent; the worthy and unworthy; the moral and immoral. With the promulgation of these special licensure requirements, differing in different states, many problems arose. It was not the desire of those in authority to impose upon the reputable practitioner; yet it was imperative to guard strictly the gateway to medical licensure for the good of the public. These problems may be said to arise from two great causes—the method by which the privilege is granted by each individual board, and the personality of the individual applicant. A homely but expressive manner of terming these two causes might be uses and abuses.

The problems arising as a result of the administration of reciprocity by individual boards may, for convenience, be divided into three classes: (1) the custom of fixed formal reciprocal agreements between boards; (2) provisions to embrace older practitioners of medicine; (3) lack of uniformity in the practical experience required of the applicant. These three causes are responsible for all of the obstacles that confront the reputable prospective applicant for license by reciprocity.

Sixteen out of eighteen Southern states report that they enter into fixed formal reciprocal agreements. Of the remaining two, one places recognition on an individual basis. The other refuses to grant reciprocity to any applicant, and explains this attitude by stating that "reciprocity regulations have not been standardized and, until they are, we will not reciprocate with any state." Two of the sixteen states that make formal agreements express doubt as to the wisdom of such a course, one by saying: "We're inclined to abandon it"; the other notes: "With a wise discretion as to the individual." Five boards state that the conditions of their agreements do not vary, being based solely on examination. The conditions of the remaining eleven contracting boards vary with various boards. In some instances one board will accept applicants from one state on examination only; from another state the basis may be examination and diploma, and still another, diploma. Seven boards confess that no application will be considered unless certified by boards with whom a formal agreement has been made. Thus is seen the wide range of conditions surrounding fixed agreements, and the multiplicity of complications and difficulties that may arise. The simplicity of individual endorsement is the strongest argument for it.

Passing now to a consideration of the means devised to enable the older practitioner of medicine to secure recognition in another state, with one exception, all boards have such provisions to fit the period when the standard of education was not as high as it now is. To become acquainted with the provisions as they operate in each state would bewilder the average intellect. They are complicated in the extreme, and would require a knowledge of the various evolutionary processes of medical laws in these states. These special exemptions are extended only to physicians qualified in other states prior to the rise in the standard in the state giving the recognition.

The lack of uniformity, as between states, in the requirement of practical experience of the applicant is marked. Four states require no experience other than a state license. Ten states require one year of experience; two require two years' experience; but one of these will accept one year of hospital experience as an alternative. One state will accept applicants only after five years' practice, but has an alternative of two years' hospital experience.

It is imperative to determine, by all possible human means, if the man who is being licensed without examination is the individual he claims to be. Unless extreme caution is observed in this matter, it is easy for an impostor to secure a license. Very few states in the South require the applicant to submit a certified autographed photograph. This requirement serves as a means to prevent a great deal of the fraud perpetrated by impostors. Requiring the applicant to appear in person before a stated session of the whole board is another excellent prevention of fraud.

The moral character of the applicant is of prime importance. No immoral man should be permitted to follow the high calling of administering to the physical ailments of his fellow man, notwithstanding the fact that he may hold a license in another state and be ever so competent. The relationship of the physician to the family is too intimate to hazard the deteriorating influence of a man unsound in moral fiber.

The Federation of Medical Boards of the United States should enlarge the scope of its activity in connection with reciprocity, and formulate a standard set of regulations for general adoption. In addition to this, a model reciprocity or endorsement law should be drafted with a view to securing the enactment of it in the general assemblies. The provisions of this model law should be such that the board is

vested with broad discretionary powers to exercise sound judgment in passing upon the fitness of applicants for endorsement without examination. The federation is in a position to effect this reform in reciprocity procedure with a minimum loss of time. It is the common ground on which the various boards meet. It is there that the various differences could be threshed out. Widely divergent views could be reconciled and, finally, a mutually satisfactory understanding and agreement reached.

Internship in Relation to Medical Education and Reciprocity

DR. I. D. METZGER, Pittsburgh: The art side of medical education has tended somewhat to deteriorate since sole scholastic training has replaced the erstwhile partial practical training under a preceptor. The clinical years in college are aiming to meet this deficiency, but the student is likely to be so engrossed by the demands of the complex curriculum as to become bewildered, if not floundered, in his conception of actual medical practice. The urgent need of a year of practical experience under competent supervision must be obvious to all discerning physicians. It gives the overfed medical mind an opportunity to digest and assimilate the theoretical ideas ingested during the four years' orgy. It gives him an opportunity to orient himself and to apply deliberately the ideas absorbed under pressure. Erroneous concepts due to imperfect comprehension can be corrected so that the young physician may later face his professional problems with assurance, with confidence, and with consequent zeal and courage.

Licensure into any state through reciprocity, or through interstate endorsement, may be secured only when the applicant meets the requirements of the medical act of that state. These acts are becoming more or less uniform under the standardization of medical schools. The chief disparity now lies in the matter of internship. Ten states now require this extra year as an essential part in the applicant's credentials to practice within their borders. In 1914, Pennsylvania established this training as a prerequisite to admission to the examination. All applicants for admission to the state by reciprocity, if graduated since that time, must meet this requirement. States demanding internship must necessarily evaluate such internship. This means the standardization of hospitals to ascertain with some degree of certainty which hospitals may be acceptable as giving the required teaching. I earnestly hope that in the near future, at this meeting if possible, there shall be established a uniform type of internship which all hospitals may follow that make an effort to qualify.

The intern year should be an integral part of the medical course, secured in the fifth year of the course, comprising an actual systematic apprenticeship which covers all the phases of medicine, and should receive equal credential evaluation with that of any other year of the curriculum. It should be so conducted as to elaborate the knowledge already gained and supplement it with such additional knowledge and experience as may be gained in his practical hospital duties.

The internship should be secured before the young graduate is admitted to the examination for licensure. The examination in turn should take cognizance of the same, and should attempt to elicit the ability of the applicant to apply his knowledge and to determine his mental power, as shown by resourcefulness and judgment, and to ascertain whether or not he is a sane and safe physician to release in the community.

The valuable modern hospital invites the intern to join its ranks of workers as a co-worker. His duty shall be that of aiding the chief in the study of his cases, in recording adequate histories and physical findings, in determining what investigations should be made as well as making them, thus encouraging the intern in every way to bring upon the case at hand all the advance knowledge recently acquired by him. With such an opportunity he will not only be satisfied but will perform with fidelity every request made of him.

The experience of the Pennsylvania bureau has convinced its members that hospital intern training can be of the highest value only when it is systematic, following critically a rotation service covering all the departments of medicine, so that the intern student shall have a supervised practical experience in all phases of medicine.

To exercise the function of reciprocity effectively, a common standard of requirements should obtain in medical education. At present each case must be administered on its own merits in determining whether the qualifications meet the demands of the medical act of the state into which the applicant desires to enter. The intern demands of Pennsylvania must appear to be rather exacting to one desiring to enter from a more lenient state. We are convinced that the cause of medical advancement is best met by securing a thorough grounding in the fundamentals before any specializing is attempted. This rotation of service balances the student mind and makes it more susceptible to the apprehension of essentials in diagnosis. It encourages team-work on the part of the staff members, thus insuring better care of the patient and more discerning medical correlation. Time service as such means time wasted and slovenly habits acquired by the unfortunate intern. His time is too valuable to be wasted, and his responsibilities are too serious to be assumed carelessly or indifferently.

An eager, purposeful spirit of service is a mightly asset in entering this exalted profession.

DISCUSSION

DR. N. P. COLWELL, Chicago: It would be a great advance, the Council on Medical Education and Hospitals believes, if the state boards generally will adopt the intern year as an essential for a license to practice, and the time is ripe when that can be done without hardship to the graduates.

DR. H. W. BRIGGS, Wilmington, Del.: It has been decided by our judiciary that under our statute we have no right to enter into any definite reciprocal relations with other states, unless those states have standards equal to or better than our own, with a proper endorsement of the examining board of the state, together with a certificate of moral character from the applicant for licensure. I think we should do away with all definite reciprocal fixed relations.

DR. THEODORE HOUGH, Charlottsville, Va.: There are signs of cooperation between the state boards and medical colleges which are most gratifying. We must maintain a certain amount of elasticity with regard to the curriculum and methods of teaching, because we are dealing with a subject that we want to improve. Every one knows that we can change our requirements in the college association far more easily than the state boards can have things changed when they are crystallized into laws. I believe the time will soon come when all medical schools will require the hospital year before graduation, but we want to work the thing out sanely and thoroughly before we require this standard.

DR. CALVIN L. JOHNSTONBAUGH, Bethlehem, Pa.: Our law has been in operation for eight years. On different occasions I have inquired of the hospital staff chiefs about certain interns they have in the hospital, and their answer invariably has been, "They, like all others, don't know anything." If that is the character of students our colleges are turning out, it is time for them to sit up and take notice, so that the medical boards of examination do not have to round out their products. The Pennsylvania law in regard to interns has been working satisfactorily in the last eight years.

DR. SCUDDER, Cincinnati: Many of the graduates seeking internships do not like to have suggested to them in what hospital they should seek internship, because they want to feel, after being out of college, they have more or less right to make a choice for themselves. One graduate will want to go to a hospital of less than 100 beds because some one has told him he will have more opportunities to do the things he wants to do right away, whatever that may mean; another will select a general hospital of 1,200 beds with a fixed rotating service. I agree with Dr. Metzger that in all hospitals for this purpose the services should distinctly and thoroughly represent medicine, surgery, obstetrics and the laboratory, but I cannot agree with him that there should be any sharp line of demarcation drawn as to how much surgical service the intern shall have, or how much obstetric or laboratory service he shall have. The average intern in going into a general hospital will fight shy of obstetric service or he will soon tire of any fixed amount of laboratory or other service. He is willing to do a little of each but not too much.

DR. T. J. CROWE, Dallas, Texas: The Texas board has put on the intern year to be effective in 1925. All classes in the colleges then will be required to have the intern year after graduation. The question of what shall constitute an internship at the present time is a rather open one and would better be deferred until we get internship throughout the country. Our own attempt to put on the intern year was postponed two years to accommodate osteopaths. We have two osteopaths on our board, and they insisted that we ought to have time to get the hospital facilities to take care of the internships.

DR. FRANK BILLINGS, Chicago: As a part of the educational system, I believe the fifth year should be a required service in public and general hospitals, and many of the sectarian and other hospitals are general. To arrive at a knowledge of the character of a hospital, I believe the Federation of State Boards, the American Medical Association, the Association of American Medical Colleges and other national organizations ought to get together on the rating of hospitals. We have overdone the word standardization, but now we should rate hospitals to know what they are able to do and how well they are able to function.

REV. CHARLES B. MOULINIER, Milwaukee: I do not hesitate to proclaim here that the hospitals in Pennsylvania as a group seem to be further advanced than the hospitals of any other one state in the Union, and I believe that is largely due to the control the state board has had.

DR. PAUL W. GOLDSBURY, Deerfield, Mass.: There seems to be a great development of sentiment along the line of rural needs, and if that is true, there should be an appeal made to the young graduates to go to the rural district hospitals. There is a great future in rural districts for medical practitioners.

DR. NATHANIAL R. PERKINS, Boston: Massachusetts does not require the intern year. We have a Class A school that fights everything of that nature in the legislature. I believe that the state boards should encourage hospital work by giving graduates a percentage for work done in the hospital year.

WEDNESDAY, MARCH 8—AFTERNOON

Graduate Work as a Licensure Substitute for Deficiency in Premedical Requirements

DR. THOMAS MCDAVITT, St. Paul: The medical schools can call their students and standardize them absolutely; but the examining boards have to deal with all the schools, some of them rigid and careful, and others often somewhat careless. During this evolution of higher standards in medical education, mention was rarely made of premedical requirements. As the public demand for better equipped medical men became increasingly urgent, the medical departments of many of our large universities began to perceive the necessity for premedical requirements: a high school education first, later one year of college work, then two years. The more advanced universities having set this example, soon medical boards began asking their legislatures for authority to advance their standards, and force the recalcitrant medical schools to accept these requirements or refuse their alumni admission to the state. The Minnesota board made a rule demanding two years of college work, preliminary to the medical course in 1907 to be active in 1912. A number of medical schools at that time had not adopted this requirement. A change in standards always provokes criticism and gives rise to cases of apparent injustice, though the ultimate aim is always to benefit the public. With us an attempt has been made to enforce a rigid application of this rule. It is a question, however, if these requirements may not, at times, prove unfair to certain conscientious and well equipped medical men who were not quite up to the maximum of the premedical requirements.

It was the experience of many boards, at the time they made their rule requiring three years of medical lectures to secure a diploma, that candidates presented themselves several years after their medical alma maters had increased the standard to three years, they themselves having been graduated with two years of lectures, but after the state board law required three years. These schools could never return to their former schedule, and comparatively few candidates could present themselves with insufficient preliminaries.

Today there are eighty or ninety medical schools, most of them affiliated with state universities or colleges of recognized standing, which demand two years of college work as a preparation for admission to their medical departments. But what of the number of graduates who took their medical training in good faith at many of these schools before they saw fit to increase their preliminary requirements? Their number is not small, nor is their ability or training negligible.

No further graduates from these schools can be presented with short or doubtful terms of study. The question before us is just this: In justice to the boards, the schools and the candidates for license, is it possible for us to suggest a substitute for these deficiencies? Must the law remain inviolate, and the candidates be forced to make up their deficiencies? Or may not some form of graduate work be substituted? If so, of what shall it consist? May not some plan of postgraduate work be advised by this organization which, while satisfying the basic requirements of boards and schools, shall be fair to the candidates? Could we properly appreciate the difficulties experienced by many applicants who faithfully fulfilled all the requirements demanded at the time they took their medical courses, I think we would realize the importance of formulating some plan to assist them out of this seeming impasse. Whatever postgraduate work may be allowed as a substitute for deficient preliminaries, it is highly important that it should be standardized.

As all the medical schools already do or soon will demand the two year preliminary, this is a difficulty that will soon right itself. However, the candidates from any medical school unwilling to adopt the two years of college work should by no means be allowed to benefit from this postgraduate substitute. It is to remedy the hiatus which some candidates encounter, as a result of the incomplete conditions which exist while these requirements are being standardized, that we are now suggesting to this organization the possibility of postgraduate work as a substitute for these premedical deficiencies. It is for you to advise what this postgraduate work shall be. It is a matter for the examining board to decide, basing its decision on the character of the candidate's deficiency. What we desire is some concrete suggestion that will meet the needs of such candidates.

DISCUSSION

DR. LOUIS B. WILSON, Rochester, Minn.: About two years ago, while chairman of the Graduate Committee of the American Medical Association, I inspected most of the graduate schools in the United States, except those on the Pacific Coast and those in the extreme South. Judging from that experience, I should say that if any consideration is given, and I believe there ought to be, to the question of Dr. McDavitt, the certificate should be most carefully guarded. We have a great many so-called postgraduate schools in the United States, and from the character of the work done in most of them I do not believe that state boards would be warranted in accepting a certificate of the work done therein as the equivalent of deficiencies in the undergraduate work. I believe, however, that this broad line should be drawn: if a certificate was given to a state board in a particular instance concerning a particular individual, it should be accepted, provided it came from a school which has now the full requirements for undergraduate work, that is, the two years, plus four years, and so on, and which will certify on honor that the record of the graduate work done in it is the equivalent of the present requirements.

DR. E. P. LYON, Minneapolis: We have an analogy to this situation in the graduate school of the University of Minnesota. A man who enters the graduate school or is a candidate for fellowship must be a graduate of a Class A medical school, having two years' premedical requirement, and the equivalent of that of the University of Minnesota. From time to time men apply for Mayo fellowships or other fellowships at Minneapolis who have not these standard requirments, men who graduated a few years ago with one year of premedical work, or graduated a few years ago with one year of premedical work, or graduated on a high school basis. Very often the recommendations of these men are of the highest type. What is the graduate school to do? Should it turn down such men, or should we have them go back to

the college of sciences, literature and art, and have them take up the subjects in which they were deficient before they went to the medical college, or shall we have them take work at the present stage of their development which will make them do the best service and be equivalent to the present requirements? And the graduate school has answered the question sensibly, I believe, by the latter alternative.

REV. CHARLES B. MOULINIER, Milwaukee: It seems to me that you are face to face with the solution of a practical difficulty. If the powers of the boards can be so exercised as to prescribe some work, after the medical course is done, by way of exception to the law and to the academic theoretical requirements, which cannot be cited to the boards as a precedent; and if the boards decide on admitting this substitute of postgraduate work on the basis of the candidate's qualifications, I should say that what has been said here can be reasonably applied, namely, that graduate work can be prescribed for such men after you have found out what kind of men they are either by practical examination or by the testimony of their mental worth and the character of their work. You will thus avoid a precedent and not permit unfit men to use that privilege. Furthermore, you would insure the public against the abuse of the power of the boards permitting unfit men to practice on the public. As a practical solution of what has been proposed here, I should say that it seems reasonably and professionally right, although theoretically and academically it is not right.

DR. WALTER L. BIERRING, Des Moines: It is gratifying to know that there is a certain flexibility being manifested in our interpretation of credentials along various lines, and that there is a board like that of Minnesota that has the courage to break away from the beaten path and acknowledge that, at least, logically certain lines of work are equivalent to premedical studies, even though academically they may not be so considered. Unfortunately, state boards are bound by the statutory restrictions which make it difficult for them to head one way or the other. Often they assume these restrictions more than they really exist, and there cannot be any question that the scientific work that is done now in the more advanced branches in medicine would fully satisfy the demands required or those requirements of premedical study. I should rather feel, however, that there should be great care in adopting this provision, that is, one ought to confine it to individual cases at present, and only when it is controlled as it is in Minnesota does it seem justified. Associated, as I have been, with another qualifying board that is trying to elevate standards of qualifications, I am inclined to think that there would be some hesitancy in making any definite changes; but there can be no question that this is a method in the right direction, and it is certainly to be commended, and in individual instances could well be followed by other state boards.

DR. CHARLES A. GROVES, East Orange, N. J.: Unfortunately, in some of the states the legal mind and the medical mind do not travel on the same track. The state of New Jersey in its statutes makes certain definite requirements which make it impossible to favor those whom we should like to favor, and if sometimes the law is lax in its construction, the result has always been the establishment of a precedent, and that precedent makes trouble every time. We refer these cases to the attorney-general of the state, and he gives us definite and accurate information immediately.

DR. JOHN M. DODSON, Chicago: Regarding the length of time between matriculation and graduation, is there any logical reason why a medical school which provides a continuous session should not allow its capable students to complete the course of instruction in four calendar years? I myself can see no reason why they should not do so. It would be a good thing if we could get these young men into practice at an earlier period than at present, and yet because of the restriction laid down twenty years ago, conditions for which no longer exist, medical schools are prevented from doing it. I think that state boards should carefully consider whether they cannot modify their laws and regulations so as to give a little more freedom to the development of pedagogic procedures.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—Dr. Leon C. Havens, Johns Hopkins School of Public Health, Baltimore, has been appointed director of the Alabama State Laboratory and Pasteur Institute, effective June 1.

Dr. Cochran Honored.—A bronze bust of the late Dr. Jerome Cochran, founder of the Medical Association of the State of Alabama and state health officer until his death in 1897, has been placed at the entrance of the health department building, Montgomery.

Hospital News.—The Alabama Baptist Hospital, Selma, was formally opened, February 14. Dedicatory services were held at the First Baptist Church, and the building was open for inspection by the public. Dr. Samuel W. Welch, state health officer, delivered an address.

ARKANSAS

Personal.—Dr. Clarence W. Waring, U. S. Public Health Service, has been appointed superintendent of the Hot Springs National Reservation, to succeed Dr. W. P. Parks. ——Dr. J. M. McDavid has been appointed health officer of West Helena.

Home Coming Meeting.—The Arkansas Medical Society announces that the annual session, which will be held in Little Rock, May 17-19, will be a "home coming meeting." All members of the American Medical Association who at one time lived in Arkansas are urged to attend. These physicians are asked to "stop off" at Little Rock on their way to St. Louis for the annual session of the American Medical Association, which takes place the week following the Arkansas state convention.

CALIFORNIA

Donation by Physician.—Dr. Norman Bridge, formerly of Chicago, has donated $300,000 to the California Institute of Technology, bringing his donations to that institute to $550,000. The new gift will be used for extensions to the recently completed Norman Bridge Laboratory and in providing a technical library for the staff of the department of physics.

Licenses Revoked.—It is reported that the board of medical examiners recently suspended the license of Dr. Charles E. Brown, Fresno, following conviction of violation of the Harrison Narcotic Law.——The board revoked the license of Dr. Holmes Troutman, Oakland, who is serving a sentence in San Quentin prison.——A newspaper report states that the licenses of Charles E. Marsh, San Diego, and Roy R. Millsap, Los Angeles, naturopaths, were revoked by the board of medical examiners, February 23.

Hospital News.—The Standard Oil Company Sanatorium, Colfax, is practically completed. This hospital is one of the units of the Colfax School for Tuberculosis and has accommodations for twenty-five patients.——It is reported that Dr. Charles Weddle has recently sold the Dinuba Sanatorium for $30,000.——The new infirmary at the Tulare-Kings County joint tuberculosis hospital, Springville, was opened for the reception of patients, March 1.——The Casa del Mar Hospital was opened to the public, March 4. A main building will be added in the near future at a cost of $100,000 and the hospital will have a capacity of 150 beds.——The new Los Angeles Polyclinic Hospital, Los Angeles, will soon be erected, at a cost of $3,000,000. Construction of the first unit of 300 beds will be started in the autumn, and the second, or convalescent unit, will be erected in the spring of 1923, when the other units will follow.

DISTRICT OF COLUMBIA

New Members of University Faculty.—Georgetown University School of Medicine, Washington, has announced four additional members of the faculty as follows: Dr. Howard F. Strine, M. C., U. S. Navy, has been appointed associate professor of the principles and practice of surgery; Dr. Francis M. Munson, U. S. Army, retired, lecturer on preven-

tion of diseases; Dr. Henry S. Bernton, lecturer on hygiene, and Dr. James A. Gannon, associate professor of surgery.

Conference on Public Health and Sanitation.—A conference of deans of schools of public health and medical schools, presidents of universities with which these schools are connected, a selected number of professors of public health subjects and men actively engaged in public health work, on "The Future of Public Health in the United States and the Education of Sanitarians," will be held in Washington, March 14-15, under the auspices of the U. S. Public Health Service. The conference will consider various newer aspects of public health and their importance in the training of sanitarians; the various kinds of sanitarians which will be needed for the future, and the recruiting and training of more and better sanitarians.

FLORIDA

Polk County Medical Society.—At the annual meeting of the society, held recently, at Lakeland, under the presidency of Dr. Herman Watson, the following officers were elected: president, Dr. Frank E. Irons, Winter Haven, and secretary, Dr. Herman Watson, Lakeland.

Florida Public Health Association.—On the invitation of the County Federation of Women's Clubs and the medical societies, the Public Health Association is holding a series of clinics throughout the state, both for white people and for negroes, under the direction of Dr. L. C. Brewer, director of medical service for the Florida Public Health Association, and in cooperation with the state board of health. No treatment is offered through the clinic, those who show evidence of tuberculosis being referred to their family physicians. The nurses of the association will visit them and assist them in carrying out the instructions of their physicians.

GEORGIA

Personal.—Dr. John Calvin Weaver, for eleven years physician and surgeon to the federal prison, Atlanta, has resigned to resume private practice.

Hospital News.—The new hospital at Sycamore was formally opened in January. Drs. John T. Moore and Warren A. Harrison will have charge of the institution.

ILLINOIS

Medical Attention for Paupers.—Contracts have been awarded to the following physicians of Piatt County for medical attention to paupers, as follows: Dr. Abe D. Furry, Monticello, and Dr. Vigo T. Turley, Bement.

Health Promotion Week.—Health promotion week will be held in May, under the auspices of the state department of public health. A health Sunday will be observed in the churches, and a birth registration campaign and better baby conferences will be held.

Hospital News.—Plans have been completed for the New Champaign County Children's Home, Rantoul, and the new building will be erected at a cost of $37,500.——A new home for orphan children will be erected by the Masons at Rockford.——Ground will soon be broken for the erection of a new hospital at Hillsboro, at a cost of $250,000.

Chicago

Robert Koch Society.—At the meeting of the Robert Koch Society, February 28, at the Chicago Tuberculosis Institute, the following officers were elected for the coming year: president, Dr. Everett Morris; secretary, Dr. Guy Edward Beard; trustees, Drs. Gray, Britton, Rice, Wheaton and Biesenthal.

Quarantine Laws.—Mrs. Jennie Baramore, proprietor of a rooming house in Chicago, was recently quarantined, when it was found that she harbored typhoid bacilli. She brought habeas corpus proceedings against Dr. John Dill Robertson on the grounds that the authorities had no right to quarantine her, but the supreme court ordered that she be removed to quarantine.

Intersectional Meeting of Chemists.—The Chicago section of the American Chemical Society was host to nine neighboring sections at a meeting at Northwestern University, March 11. In the afternoon, Dr. H. E. Howe, newly appointed editor of the *Journal of Industrial and Engineering Chemistry*, delivered the main address; in the evening a report was made of the work done by G. L. Wendt and C. E. Irion on the breaking down of tungsten into the simpler element, helium.

Poliomyelitis Cases Reported.—Quite a number of cases of poliomyelitis continue to be reported to the state department of public health, although this is the off season for that disease. Cases have been recently reported from Logan, Whiteside, Scott, Livingston, Lee, Marion, Coles and Sangamon counties. For the most part, these counties are points of foci where infantile paralysis has been more or less epidemic since 1916, at times reaching alarming proportions. It is felt that these sporadic cases during the winter months should serve to keep physicians on the alert for the disease.

INDIANA

Hospital News.—Three new buildings will be added to the Marion County Tuberculosis Hospital at a cost of approximately $182,000.——A hospital for veterans of the World War will be erected. Indiana, Kentucky and Ohio comprised the district.——An isolation hospital will be erected at La Porte in the near future.

LOUISIANA

Hospital News.—A three story addition will be made to the clinic building of the Charity Hospital, New Orleans, at a cost of $84,000.——The site has been purchased for the new Baptist Hospital, New Orleans, at a cost of $2,000,000.——A bill introduced into the House recently rules that only poor and needy persons can apply for treatment at any state charity hospital.

MASSACHUSETTS

Hospital to Close for Lack of Funds.—Lack of money to meet the expenses of the Infants' Hospital, Boston, will necessitate its closing unless $25,000 can be raised for the current expenses. This is reported to be the only hospital in New England devoted exclusively to the care of sick babies.

Boston Association of Cardiac Clinics.—A meeting of the association was held at the Boston City Hospital, March 16, at which Dr. William Irving Clark, Worcester, spoke on "Heart Disease in Industry" and Dr. Harold H. Brittingham, Boston, read a paper on "Exercise Tests and Vital Capacity."

New England Pediatric Society.—The seventy-third meeting of the society was held, March 10, in Boston, and the following papers were read: Dr. Robert L. DeNormandie, "Disorders of the Breast in the Early Days of Lactation"; Dr. James S. Stone, "Unilateral Hypertrophy of the Breast in Childhood," and Dr. Samuel A. Cohen, "Oral Disorders in Pediatrics."

Massachusetts Association of Assistant Physicians.—The fifty-third meeting of the Massachusetts Association of Assistant Physicians of the Department of Mental Diseases was held at the Psychopathic Hospital, Boston, March 1. Drs. Harry C. Solomon and L. J. Thompson conducted a clinic, during which intraventricular and cistern punctures were demonstrated and two cases of lethargic encephalitis with parkinsonian syndrome were presented.

Rural Hospital Service.—A new organization called the "Committee on Rural Health and Medical Service," consisting of Massachusetts physicians, has inaugurated a plan to provide people throughout the state with medical care and attention similar to that which the hospitals, dispensaries and specialists afford people in the cities. Hospitals will be established, subscribed to and directed by the people, in different communities, and clinics will be conducted by specialists.

Personal.—Dr. Simeon Burt Wolbach has been appointed Shattuck professor of pathologic anatomy, to succeed Dr. William T. Councilman, who resigned recently.——Dr. David J. Johnson, Boston, has been appointed institutions commissioner to succeed Major W. Casey.——Dr. Francis Weld Peabody, has been appointed assistant professor of medicine, Medical School of Harvard University, Boston.——Dr. Walter D. Shurtleff, Plymouth, has been appointed member of the board of health.——Dr. John A. Ceconi, Dorchester, has been appointed epidemiologist of the health department.——Dr. Charles E. Abbott, Andover, has been appointed a member of the board of health for a period of three years.

MICHIGAN

Address by Radiophone.—Dr. Walter H. MacCraken, dean of the Detroit College of Medicine and Surgery, spoke over the Detroit *News* radiophone, February 8, on "The Problems of the Doctor of Today."

Newaygo County Medical Society.—The annual meeting of the society was held in January, under the presidency of

Dr. Price T. Waters, White Cloud. The following officers were elected for the ensuing year: president, Dr. Peter Drummond, Grant, and secretary-treasurer, Dr. William H. Barnum.

Joint Health Meeting.—At a joint meeting of a group of health agencies and the Kent County Medical Society, held at Grand Rapids, March 8, under the auspices of the Blodgett Home for Children, the Clinic for Infant Feeding, the Mary Free Bed Guild, the Grand Rapids Anti-Tuberculosis Society, the Butterworth Hospital, the Visiting Nurse Association, the Parent Teachers' Association, the board of education and the city health department, Dr. Haven Emerson, professor of preventive medicine, Columbia University, New York City, delivered a lecture on "Periodic Medical Examination of the Individual and the Part It Plays in Public Health."

Personal.—Dr. Mary T. Stevens, Detroit, has resigned as member of the board of commissioners of the House of Correction.——Dr. Burt R. Shurly was elected vice president of the Detroit Tuberculosis Sanatorium at the annual meeting. ——Dr. Robert J. Hutchinson has been elected chief of staff of the Butterworth Hospital to succeed Dr. Alden H. Williams.——Dr. Preston M. Hickey, Detroit, has been appointed professor of roentgenology at the University of Michigan, Ann Arbor, to succeed the late Dr. James Van Zwaluwenburg.——Dr. James E. Davis, Detroit, president of the Wayne County Medical Society, has been appointed secretary of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, to succeed the late Dr. E. Gustave Zinke, Cincinnati.

MINNESOTA

Hospital News.—A new fireproof building will be built at the tuberculosis sanatorium, Pine City, with forty-five rooms, consisting of private rooms and small wards, a laboratory, drug room and offices.

Upper Mississippi Medical Society.—At the annual meeting of the society held at Brainerd, the following officers were elected for the ensuing year: president, Dr. Charles G. Nordin, Brainerd, and secretary-treasurer, Dr. George I. Badeaux, Brainerd.

Personal.—Dr. George W. Phillips, clinical director of the Aberdeen U. S. Public Health Service Hospital No. 65, St. Paul, has been transferred to a similar position in Portland, Ore.——Dr. Hans M. Lichtenstein was recently elected president of the Winona County Medical Society.

Health Institute.—The U. S. Public Health Service, in cooperation with the state board of health and the University of Minnesota Medical School, will conduct an extensive health institute in the medical buildings on the university campus, March 20-25, under the direction of Dr. Albert J. Chesley.

Southern Minnesota Medical Association.—The midsummer meeting of the association will be held, June 19-20, at Rochester. The program for the forenoons will be clinical in character and the program for the afternoons will be scientific. The banquet will be held, June 19, at the New Kahler Hotel.

MISSOURI

Abolition of Health Office.—It has been decided by the mayor that the position of city health officer of Crisfield is a useless expense to the city. Dr. Clarence E. Collins, who is filling the position, will resign, the resignation to take effect immediately.

Personal.—Dr. David H. Dolley, professor of pathology at the University of Missouri, has been appointed director and professor of pathology in the St. Louis University School of Medicine. Dr. Ralph L. Thompson has resigned as director but will continue in the department.

Tribute for Physician.—Pursuant to a proclamation by Mayor Reynolds of Breckenridge, the citizens paid homage to "its most beloved and distinguished citizen," Dr. Joseph S. Halstead who attained his one hundred and fourth birthday, March 5. All business was suspended for 104 minutes at noon and every resident bowed in prayer. Dr. Halstead is a graduate of the Medical Department of Translyvania University, Louisville, Ky., 1840. His wife is 93 years of age.

NEBRASKA

Personal.—Dr. Claude W. Mason, medical missionary at Kiu-Lung-Kiang, Yunnan, China, has recently returned to China after a short visit in Omaha.

Cass County Medical Society.—At the annual meeting of the society held recently, in Weeping Water, the following officers were elected for the ensuing year: president, Dr. Edward H. Worthman, Louisville, and secretary-treasurer, Dr. Oscar E. Liston, Elmwood.

Physician Honored.—A joint meeting of the Omaha-Douglas County Medical Society and the Nebraska and Iowa Pediatric Society was held, February 28, to honor Dr. Harry M. McClanahan, professor of pediatrics, University of Nebraska College of Medicine, Omaha. Dr. Isaac A. Abt, professor of pediatrics, Northwestern University Medical School, Chicago, gave the principal address.

Hospital News.—The Overland Cottage Hospital has recently been opened at Scottsbluff.——The General Hospital and the Evans Hospital, Columbus, have recently been merged, and the name changed to Columbus Hospital.——Dr. Chester E. Lewellen, Bayard, has recently leased the Bayard Hospital and equipment and will be in charge of the institution.——"Fairview," the former home of William J. Bryan, Lincoln, will become the new Methodist Hospital.

NEW HAMPSHIRE

Hospital Drive.—A hospital drive is being conducted at Claremont by the Rotary Club, to raise $60,000 for a new wing for the Claremont General Hospital.

Personal.—The governor has appointed Dr. Abram Mitchell, Epping, member of the state board of arbitration and conciliation.——Dr. Charles W. Adams, Franklin, has been appointed to the board of registration in medicine.

NEW YORK

Harvey Society Lecture.—The eighth Harvey Society Lecture will be delivered by Prof. Winthrop J. V. Osterhout, professor of botany, Harvard University, Boston, at the New York Academy of Medicine, March 25, on "The Mechanism of Injury, Recovery, and Death."

Law Regarding Treatment of Soldiers.—A bill has been introduced into the legislature to provide medical and surgical treatment for veterans who are not entitled to receive treatment from the federal hospital service. Such relief will be provided at the expense of counties and cities of the state.

Hospital News.—A hospital has been erected at Utica by the Masons as a memorial to the more than 16,000 masons from the state of New York who took part in the World War. The hospital was built at a cost of $1,000,000 and has accommodations for 225 patients. The institution will be formally dedicated, April 22.

Legislation to Restrict Unprincipled Druggists.—A measure is before the legislature to end the activities of unprincipled pharmacists and druggists operating without a license. The measure would prevent the owning and operating of a drug store except by licensed druggists. It was recently brought out that nearly 500 drug stores were opened in this state last year by unlicensed proprietors.

Personal.—Dr. Frederick C. Devendorf has been appointed passed assistant surgeon, U. S. Public Health Service, with the rank of major.——Dr. Daniel V. O'Leary has been appointed health officer of the sixth district, Albany, to succeed Dr. Edmond J. O'Donnell, who resigned recently.—— Dr. Benjamin Schwartz has been appointed visiting physician to the Gouverneur Hospital, New York City.

Aid for Pharmaceutical Research.—The American Pharmaceutical Association has available a sum amounting to $360,000, for the encouragement of research, to be awarded after Oct. 1, 1922. Those desiring financial aid in such work, should communicate before June 1, with Prof. H. B. Arny, chairman, A. Ph. A. Research Committee, 115 West Sixty-Eighth St., New York, giving their past record and outlining the particular line of work for which the grant is desired.

Oppose Chiropractic Bill.—A hearing on the Chiropractic bill was held in Albany, March 7, at which Dr. Augustus S. Downing of the state educational department led the opposition. Others who appeared in opposition to the bill were Dr. S. Dana Hubbard, New York City Department of Health; Dr. C. E. Lateman, representing Dr. Hermann M. Biggs, state health commissioner; Dr. James F. Rooney and Dr. James N. VanderVeer, representing the state medical society. The state osteopathic society is opposing the bill.

Practiced Without a License.—It is reported that Louis Pulvermacher of Brooklyn was recently convicted of prac-

ticing medicine without a license and was fined $250. Pulvermacher, who is 70 years of age, stated that he was admitted to the practice of medicine in Germany before coming to this country forty-four years ago, but he admitted that he was not licensed to practice in this country. He claimed that he was a regularly ordained rabbi of the Hebrew church and for that reason had the right to use the title of "doctor."——It is reported that Isaac Fullerton of Columbus Grove, a "healer" accused by the state medical association of practicing medicine without a state certificate, on February 22, was found guilty and fined $100 and costs.

Legislature Bureau Recommends Action.—The legislative bureau of the Medical Society of the State of New York has issued a special bulletin suggesting that all who are interested in medical legislation write and telegraph individual senators, and assemblymen especially, to pass senate bills Int. No. 536 and Int. No. 537, in the Senate, and concurrent assembly bills Int. No. 740 and Int. No. 741, in the assembly, known as the amendments to the public health law in relation to the practice of medicine, and commonly known as the "medical bills"; and also to write and telegraph to hold senate bill, Int. No. 368, "the chiropractic bill," in their committee, and all assembly chiropractic bills, introductory numbers 685, especially Int. No. 1283 (the Everett bill) and Int. No. 1421, in the committee on rules.

New York City

Hospital News.—Col. Charles E. Forbes, director of the U. S. Veterans' Bureau, has ordered the immediate abandonment of the Fox Hills Hospital on Staten Island. The 850 patients now in the hospital will be transferred to hospitals in and about New York City. The hospital is being abandoned because it has been declared a firetrap, and conditions have been said to be deplorable.——Plans have been filed for an eight and nine story hospital on the property of the Roosevelt Hospital. The cost of the new building is estimated at $500,000.——The Harlem Eye and Ear Hospital formally opened its new building, March 14.

NORTH CAROLINA

County Medical Meeting.—At the annual meeting of the Johnston County Medical Society held in January, the following officers were elected for the ensuing year: president, Dr. Carl V. Tyner, Smithfield, and secretary-treasurer, Dr. John H. Fitzgerald, Smithfield.

Babies' Feeding Station.—A baby feeding station, where babies will be given expert attention, has been established at Charlotte, under the direction of the Charlotte Cooperative Nursing Association, with the assistance of Drs. Yates Faison, Myers Hunter and John R. Ashe.

Hospital News.—The Elizabeth City Hospital has recently changed its name to Pasquotank Municipal Hospital and will be operated as a cummunity hospital. The hospital was formerly under the direction of the U. S. Navy.——Contracts have been let for the erection of three new buildings at the state hospital for the insane, Morganton, consisting of a new dormitory for men, a house for the staff and a large central kitchen. Work will be started at once and the buildings will be ready for occupancy in seven months. The cost will be $103,000.

OHIO

Personal.—Dr. E. R. Henning, Bellefontaine, has been elected president of the Association of Big Four Railway Surgeons.——Dr. Louis Schwab, Cincinnati, has been elected president of the Cincinnati Obstetrical Society.

Cincinnati Public Health Federation.—At the annual meeting of the federation held recently, Dr. Julian Benjamin was reelected president; Dr. Carey McCord was elected vice president, and Dr. A. C. Bachmeyer, honorary secretary.

Summer Courses at University.—Special courses will be instituted at the Miami Medical School, Cincinnati, for teachers who desire to take up special work in classifying and training mentally defective and subnormal children.

Hospital News.—Contracts have been awarded for the new receiving hospital addition to the Longview Hospital, Cincinnati, at a cost of $229,117. It is planned to erect the new building upon land adjoining the General Hospital or near the University of Cincinnati Medical College.

Health Commissioners Meeting.—A meeting of the commissioners of the southwestern district was held at Dayton, February 3. Dr. C. A. Neal, health commissioner of Hamilton County, was reelected president of the district organization; Dr. H. H. Pansing, Montgomery County health district, was reelected secretary.

Physician Arrested.—It is reported that L. C. Wolfe, Sullivan, was arrested January 19, and fined $25 and costs on two charges of practicing medicine without a license and $500 for violation of the Harrison Narcotic Law. Four hundred dollars of the latter sum was refunded on condition that he turn over to the state between 400 and 500 bottles of medicine in his possession and that he leave the state of Ohio immediately.

New Health Commissioners.—The following physicians have been appointed health commissioners: Dr. John L. Gray, Caldwell, health commissioner of Noble County; Dr. David R. Williams, Girard; Dr. James S. Mariner, East Youngstown; Dr. Oliver U. O'Neill, Ironton, to succeed Dr. Elmer E. Wells; Dr. William K. Ruble, Clinton County and Wilmington; Dr. Thomas T. Church, Salem; Dr. Silas A. McCullough, Columbiana County; Dr. Walter H. Brundage, Delphos; Dr. George E. French, Elyria; Dr. James J. Martin, Crawford County, and Dr. Cyrus W. Chidester, commissioner of Delaware City.

OREGON

Hospital News.—The Ashland Sanatorium, established in 1915, with Dr. George O. Jarvis as medical director, has been closed and in future all patients will be taken to the Sacred Heart Hospital, Medford.

OKLAHOMA

Hospital Notes.—A new hospital will be erected for Oklahoma County, at a cost of $200,000. The site has not yet been selected.

State Serological Association.—The Oklahoma Association of Laboratory Workers has changed its name to the State Serological Association, in order that technicians and laboratory workers who are not physicians may be eligible for membership. Mr. L. E. Woods, Enid, was elected president, and Dr. William H. Bailey, Oklahoma City, vice president, for the year 1922.

Smallpox Epidemic in Prison.—A prisoner from Kansas City was taken sick in the jail at Poteau and when the case was diagnosed as smallpox many of the other prisoners were vaccinated. All who did not receive inoculation had the disease and nine of these died between January 3 and 13. The prisoners who had been successfully vaccinated within the three preceding years did not contract the disease, although they were in intimate contact with virulent cases. Following this epidemic, nineteen cases were reported outside in Poteau, resulting in twelve deaths, and the town was quarantined.

PENNSYLVANIA

Performed Illegal Operation.—A report states that Dr. William H. Bricker, Jr., Philadelphia, was found guilty, February 17, of performing an illegal operation and was sentenced to serve from ten to fifteen years in the state prison and to pay a fine of $5,000.

Philadelphia

Personal.—Dr. Clarence P. Franklin has received the cross of the Order of the Crown of Italy from the Italian government, in recognition of his services during the late war with the U. S. Army ambulance service in Italy.

Soft Drinks Must Be Pure.—Determined to protect the public against nonalcoholic beverages containing injurious ingredients, James Foust, director of the state bureau of foods, has instructed his agents throughout the state to obtain samples of various soft drinks. The need for such an investigation is shown for last year 195 prosecutions were instituted by the bureau for the sale of soft drinks in violation of the law and in 149 cases the beverages contained saccharin; forty-five were misbranded and, in one case, the beverage was unfit for drinking purposes. Fines totaling $3,185 were collected. The Keystone State Bottlers' Association is supporting the state bureau of foods. This association advocates a jail sentence for each violation of the act.

RHODE ISLAND

Medical Meeting.—The annual meeting of the Providence Medical Association was held in January under the presidency of Dr. Frank T. Fulton. The following officers were elected for the ensuing year: Dr. Norman Darrell Harvey, president; Dr. Peter Pineo Chase, secretary, and Dr. Charles F. Deacon, treasurer.

TEXAS

Texas Public Health Association.—At the annual meeting of the association, in February, at Austin, the following officers were elected for the ensuing year: president, Dr. Zachary T. Scott, Austin; first vice president, Dr. Elva A. Wright, Houston; second vice president, Dr. Joseph B. McKnight, Sanatorium, and secretary, J. W. Butler, Galveston.

Hospital News.—A new three story fireproof hospital will be built at Brownwood, with a capacity of fifty beds, at a cost of approximately $60,000, to replace the former Physicians and Surgeons' Sanatorium, which was recently completely destroyed by fire.—A new Methodist hospital will be erected shortly at Oak Cliff.—The new Harris Memorial Methodist Hospital will be erected at Fort Worth.

Dallas County Medical Association.—At the inaugural meeting of the Dallas Clinic held, February 28, under the auspices of the county medical association the following physicians delivered addresses: Dr. Allan B. Kanavel, professor of surgery, Northwestern University, Chicago, spoke on "Infections of the Hand"; Dr. George W. Crile, professor of surgery, Western Reserve University, Cleveland, read a paper on "Newer Methods of Reducing Mortality in Abdominal and Goiter Surgery"; Dr. Marvin L. Graves, professor of medicine, University of Texas, Galveston, spoke on the subject of "Syringomyelia." Dr. Joseph Recton, president of the State Medical Association of Texas, and Dr. John H. Florence, state health officer, also attended the meeting.

VERMONT

Hospital News.—The Vermont Sanatorium, endowed by Senator Proctor for $200,000, was presented by the board of trustees to the state of Vermont last year.——The Washington County Hospital, Barre, was opened for the reception of patients, December 1.

Vermont Tuberculosis Association.—The state of Vermont makes an annual appropriation of $50,000 for the care of indigent persons suffering from tuberculosis. The association is a voluntary one, affiliated with the National Tuberculosis Association, and maintains a medical consultant and three field nurses, who cover the entire state once every sixty days. Clinics are held in the larger towns and the consultant answers calls from the rural districts to see individual patients.

VIRGINIA

Bill to Provide Scholarship for Medical Students.—A bill has been introduced into the Virginia legislature establishing twenty scholarships for medical students. Ten of these are proposed for the University of Virginia and ten for the Medical College of Virginia. The bill carries the provision that every student receiving the benefits of a scholarship provided by the act shall, after graduation, practice for a period of not less than five years in a rural section of the congressional district from which he was appointed. The scholarships are to be apportioned, two to each of the ten congressional districts of the state, the beneficiaries to be selected by competitive examinations.

WEST VIRGINIA

Hospital News.—A three-story building has been erected at Martinsburg by Dr. Theodore K. Oates, for the purpose of organizing a group clinic, to be in operation by June 1.—A ward has been furnished at the King's Daughters' Hospital, Martinsburg, by the Rotary Club, for the purpose of doing orthopedic work on children whose parents cannot afford to pay for treatment.—Dr. C. E. White has resigned as superintendent of the Weston State Hospital for the Insane, effective March 1.

WYOMING

Northwestern Wyoming Medical Society.—At the annual meeting of the society, March 2, at Cody, the following officers were elected for the coming year: president, Dr. Evald Olson, Lovell, and secretary-treasurer, Dr. Frances M. Lane, Cody (reelected). Dr. Albert D. Tonkin, Cheyenne, state health officer, was the principal speaker at the meeting.

CANADA

Public Health Meetings.—The annual meeting of the Canadian Public Health Association will be held, June 6-9, in St. John, New Brunswick.——The annual meeting of the Canadian Association for the Prevention of Tuberculosis will be held in connection with the Canadian Public Health Association.——The Canadian National Council for Combating Venereal Disease will also hold its annual meeting in St. John.

Hospital News.—A new building for acute mental cases has just been completed at the Provincial Hospital, Selkirk, with accommodations for sixty-five patients, at a cost of $750,000. A building for the superintendent and a home for nurses will be added in the near future. Dr. Barnes, formerly of Homewood Sanatorium, Guelph, Ont., has recently been appointed superintendent of the institution.——A training school for the feebleminded, on the farm colony plan, has been erected at Portage la Prairie at a cost of $150,000, with accommodations for fifty inmates. As soon as finances permit, fifteen buildings will be added to the unit.——The Psychopathic Hospital has been erected at Winnipeg, at a cost of $75,000, with accommodation for forty patients.——Dr. Alvin T. Mathers, director of the Psychopathic Hospital, Winnipeg, has been appointed medical director of mental hospitals in Manitoba.——The Provincial Hospital, Brandon, has received $1,400,000 from the government, $75,000 to be used for the erection of a fully equipped building for acute cases of mental disease, to be completed in 1923, with laboratories, occupation rooms, library, staff quarters and accommodations for 100 patients. One unit for the accommodation of eighty male patients has been completed at a cost of $150,000 at the colony for chronic dements, one mile from the main building. Four units will eventually constitute the colony, with accommodations for 250 patients. A nurses' home has been erected at a cost of $500,000. Dr. Charles A. Baragar has recently been appointed superintendent of the institution.——The government of Manitoba has spent more than $2,300,000 since 1918 on capital account for the insane and feebleminded.

GENERAL

The Western Electro-Therapeutic Association.—The fourth annual convention of the association will be held in Kansas City, Mo., April 20-21, under the presidency of Dr. Curran Pope, Louisville, Ky.

Venereal Disease Statistics.—It has been reported by the U. S. Public Health Service that during the months of October, November and December, 1921, 80,140 cases of venereal disease were reported to the state boards of health, and 35,681 new cases were admitted to the venereal disease clinics.

Legislation to Prohibit Transportation of Peyote.—A bill presented to Congress by Representative Hayden forbids either the transportation in interstate commerce or the importation of any peyote or anhalonium or mariahuana or cannabis indica or any of its derivatives. Offenders are punishable by fine or imprisonment.

Druggists to Receive Annual Liquor Supply.—A year's supply of liquor will be available to wholesale druggists under the new regulation just issued by Internal Revenue Commissioner Blair of the Treasury Department. The druggist, under the regulation, may procure an amount of liquor equal to 10 per cent. of the value of his drug business sales during the last year instead of a supply for only a three-month period, as formerly. Additional amounts of liquor to supply increased prescriptions issued by physicians, however, may be obtained during the twelve months with the approval of the commissioner.

Influenza.—Telegraphic reports to the U. S. Public Health Service for the week ending March 4, show that there is a slight reduction in the number of cases of influenza reported. Nearly all of the states show an improvement. Twenty-six states report 21,188 cases, as compared with 21,509 the preceding week. At this season of the year, an increase in the number of cases of epidemic cerebrospinal meningitis usually occurs, but the reports show fewer cases than for the preceding week, and also fewer than for the corresponding week of 1921. Diphtheria shows a slight increase in number of cases over the preceding week.

Postgraduate Course in Spanish and Portuguese.—The New York Polyclinic Medical School and Hospital, New York City, announces a postgraduate course in Spanish and Portuguese, as well as English, beginning Sept. 18, 1922. Among the professors are Prof. Damaso Rivas of the University of Pennsylvania; Dr. R. Ruiz Arnau, a former president of the Academy of Medicine of Porto Rico; Dr. J. A. Lopez of the University of Syracuse; Dr. F. H. Rivero, a former professor of the Central University of Venezuela; Prof. William Sharpe, New York City; Prof. A. Freire de Carvalho of the

University of Rio de Janeiro, and Dr. E. Hurtado of the University of Bogotá, Colombia.

Prophylactic Value of Pneumonia Vaccines.—In a statement issued by the public health committee of the New York Academy of Medicine, March 8, it is announced that the experiments of prophylactic inoculation against pneumonia carried out during the period of the war and subsequently have not thus far yielded sufficiently convincing proof of its efficiency to warrant universal application. The experiments have, however, established that the vaccines have some value against three of the fixed bacteriologic types of lobar pneumonia and the vaccinations do no harm. There have been no fatal results from them but the duration of immunity secured is not very long—probably not more than five or six months.

Suicides in 1921.—According to the annual report of the Save-A-Life League, with headquarters in New York, more than 20,000 persons committed suicide in this country last year. According to the report, suicides were 23 per cent. more numerous in 1921 than in 1920. There were 840 suicides in New York City during 1921, an increase of 103 over 1920. Among the 1921 suicides were 10 editors, 10 well known writers, 40 college students, 51 schoolteachers, 21 clergymen, 57 judges and lawyers, 7 mayors, 93 bankers, and 88 presidents of large business concerns. Twelve hundred of these suicides, before killing themselves, murdered 2,000 other people. Loss of employment, commercial failure, and reactions from the war are prominent among the assigned causes of the suicides, but many were attributed to amazingly trivial causes.

LATIN AMERICA

French Professor in Paraguay.—The Paraguayan government has engaged Professor André of Paris to teach in the School of Medicine during a three year period, beginning March, 1922.

Remodeling of Guatemala Medical School.—New buildings are planned for the Medical School of Guatemala and for this purpose data have been obtained from several American medical schools.

Plague Disappears from Rio.—The *Brazil-Medico* of February 4 states that since the third case of bubonic plague was reported some time before no new cases have been discovered, and no sick or dead rats have been found.

Tribute to Dr. Niobey.—When Dr. Domingos Niobey entered the National Psychiatric Hospital at Rio, for his daily rounds, on February 8, it happened to be the fortieth anniversary of his entering on the charge of the institution, and he found the place decorated and a number of friends to welcome him. The *Brazil-Medico* reproduces the address of tribute and gratitude presented to him signed by all the personnel of the hospitals and charities service of the city.

FOREIGN

Influenza in Italy.—It was estimated that approximately 10 per cent. of the population of Trieste were suffering from epidemic influenza from December to January.

Diploma in Tuberculosis.—The Welsh National School of Medicine will hereafter grant a diploma in tuberculosis as a natural corollary to the university chair in this subject.

Medico-Psychological Association of Great Britain and Ireland.—At a meeting, February 23, in London, under the presidency of Dr. C. Hubert Bond, Dr. T. S. Good read a paper entitled "The Use of Analysis in Diagnosis."

Women Physicians Barred.—The London Hospital has issued a decree that women students shall henceforth be excluded. The reason given is that joint instruction on certain subjects cannot be properly conducted with mixed classes.

Guarantees for Shaving Brushes.—It has been announced by the Egyptian Department of Health that certificates of disinfection must accompany all consignments of shaving brushes manufactured in the United Kingdom and exported to Egypt.

Association of Economic Biologists.—The annual meeting of the association was held, February 24, in London. Dr. John Rennie read a paper on "The Present Position of Bee Disease Research" and gave a demonstration of polyhedral disease in *Tipula*.

Centennial of Warsaw Medical Society.—The Warsaw Medical Society was founded at the close of 1820, and it celebrated recently its belated centennial. Sokolowski reviewed the long history of the organization, and Pawinski gave a historical sketch of the evolution of the conception of the vital force, the *pneuma*, the *spiritus vitale*.

Personal.—Sir William Thorburn has been elected president of the St. Andrews Society of Manchester.—Dr. T. W. Mitchell has been elected president of the Society for Psychical Research, London, to succeed Dr. William MacDougall.—Professor H. Claude, physician to the Hôpital Saint Antoine, has been appointed professor of psychiatry of the Faculty of Medicine of Paris.

Royal Sanitary Institute.—The annual congress of the Royal Sanitary Institute will be held at Bournemouth, England, July 24-29, under the presidency of Major John Seely. Sectional officers will be as follows: sanitary science: president, Sir Arthur Newsholme; secretary, Dr. Charles Porter; maternity, child welfare, school hygiene, and medicine: president, Dr. George Newman; secretary, Dr. George F. Buchan; social and domestic hygiene: president, Mrs. Lefroy, secretary, Dr. H. J. Cates.

Federation of Medical Associations and Syndicates.—At a meeting of the Faculty of Medicine of Paris, held recently, a federation was created, by unanimous vote of the delegates of the various associations and syndicates, entitled "La Fédération corporative des médecins de la région Parisienne," for the purpose of promoting the welfare of the medical profession, which was unprotected owing to lack of cooperation. The federation consists of consulting physicians and surgeons, general practitioners and medical students.

Leper Colony at Bangkok.—A modern leper colony is planned for Bangkok, Siam. The ministry of local government and the Siamese Red Cross will cooperate in the work. Submission to treatment will be voluntary at first but a segregation law has been proposed which will be enforced as soon as the plans are sufficiently developed and the staff is organized. Chaulmoogra oil treatment will be used, as Siam has a large number of trees from the seeds of which chaulmoogra oil is derived. The number of well developed cases of leprosy in Bangkok alone is estimated at more than 500.

Bureau of Information for Foreign Physicians in Paris.—A letter from the Association for the Development of Medical Relations between France and Allied or Friendly Nations states that that organization has established a bureau of information at the Salle Béclard, Faculté de médecine de Paris, 12 Rue de l'Ecole de Médecine for the purpose of affording to foreign physicians and students any kind of assistance which their studies while in France may necessitate. The secretary will be glad to furnish information and the association is ready to organize courses of lectures on subjects suggested.

Protest Against Quack Advertisements in the Netherlands.—The organized pharmacists of the Netherlands, the Green Cross, and the Netherlands Society for Combating Quackery have recently presented a petition to the minister of labor begging him to use his influence to suppress the publication in the daily and weekly lay papers of the advertisements of charlatans. The petition sets forth in plain language the damage of the public health and pocket from such practices, and it is published in full in the *Pharmaceutisch Weekblad*, which reaches all the pharmacists. The *Nederlandsch Tijdschrift* comments on the remarkable absence of medical men in this movement. Comparatively few are likely to learn anything about it.

The Strike in the Public Utilities at Berlin.—Our Berlin exchanges relate that the consequences of the strike at Berlin of the employees of the electricity, gas and water works and transportation were most deplorable for the public health. The organized medical profession issued an appeal and protest saying that the sick in the hospitals had to lie in cold, unlighted rooms, with no provisions for washing or getting food cooked. The *Deutsche medizinische Wochenschrift* states that at the Friedrich Children's Hospital, for example, among the hundreds of children were 160 infants, who had to be kept in unheated rooms, with no chance for heating their milk or washing their diapers. No operations could be attempted on account of the lack of light. The nurses went from bed to bed with a kerosene lamp in their hands. Similar conditions prevailed in all the hospitals. The editor appeals to physicians in general to record the cases they encountered in which special injury resulted from these conditions, saying that material thus compiled is to be presented to the government to render the return of such conditions impossible. The *Klinische Wochenschrift* remarks, "The strike lasted only a few days, but every hour of these days resulted in more injury than could be made up in as many weeks." The reports

from hospitals, from practitioners, dentists and pharmacists show absolutely incredible hardships for the sick. "The experiences each physician has had to go through during the strike are in many instances sensational beyond what the wildest imagination could conceive. Such experiences would convince even the lay public of the direct and indirect injury therefrom." The editorial joins in the appeal to physicians to write out their experiences and let them be known so that such ruthlessness can be averted in future. The direct causal connection between privations and injury to health can be shown up in these experiences for public recognition more clearly than there was ever a chance before, and the direct responsibility involved.

Deaths in Other Countries

Dr. **E. Jendrassik,** professor of internal medicine and neurology at the University of Budapest, author of numerous works on organic heart disease, etc., and of Jendrassik's maneuver, aged 63.——Dr. **Hellas,** a member of the Mount Everest expedition, noted for his research on physiology at high altitudes and for his knowledge of the Himalayas.——Dr. **V. Galippe** of Auteuil, France, noted for his researches in toxicology, stomatology and bacteriology, especially his denial that copper sulphate is a violent poison. He was 75 years old, and had recently published a work on "Life and Matter."——The *Nederlandsch Tijdschrift* mentions the death of Dr. **J. Petri** of the German national public health service, of Petri dish fame.——Dr. **O. Busse,** professor of pathology at the University of Zurich.——Dr. **P. Starke** of Leipzig, who had long served as secretary of the Leipzig League.——Dr. **J. F. Fischer,** the leading roentgenologist and radium worker in Denmark, long a sufferer from his pioneer work in this line which had made a number of operations necessary. He served in the Copenhagen city council for the last nine years and took an active part in promoting medical and hygienic progress in Denmark, aged 54.——Dr. **M. Navarro** of Rio de Janeiro.——Dr. **E. Sargent,** health officer of Lancashire, England, for twenty-seven years, died recently, aged 73.——Dr. **A. M. Sydney-Turner,** Sussex, England, formerly editor of *Guy's Hospital Gazette*, died, February 1, aged 73.

Government Services

Contemplated Reorganization in Abeyance

The administration has with reluctance given up hope of bringing about a general reorganization of the government at this time. Walter F. Brown, of Ohio, as the representative of the President on the Joint Committee of the two houses of Congress on reorganization of the administrative branch of the government, has submitted a reorganization plan to the President. This plan has been on the President's desk for several weeks. The administration realizes that it will be impossible to accomplish anything during the present session of Congress. This failure to agree on reorganization is a keen disappointment to the President, who has taken the stand that a new department should be created, to be known as the Department of Public Welfare, in which would be grouped the various bureaus relating to public health, sanitation, child welfare and kindred subjects, which are now distributed through half a dozen of the existing departments.

The fundamental difficulty about accomplishing any reorganization that would be worth while is that the department heads, almost without exception, are opposed to surrendering the authority that they now exercise.

The one question as to whether the War and Navy Departments shall be consolidated has been argued for several months by the cabinet and the leaders in Congress, and apparently a decision is still far away. There is also the question as to whether it would be wise to transfer the forest service from the Agriculture Department to the Department of the Interior. The mere proposal that the forest service be transferred from the Department of Agriculture to the Department of Interior has been the occasion for sharp controversy between Secretary Wallace and Secretary Fall, heads, respectively, of these departments.

Meanwhile the leaders in Congress are waiting for Mr. Brown, as the President's representative, to submit his plan for reorganization. The indications now are that President Harding will not submit Mr. Brown's report to Congress, as the cabinet itself cannot agree on the proposed plans of departmental reorganization, and Congress will probably fail to pass the necessary legislation. Senators and representatives who have devoted some thought to the subject say it is apparent that any plan for reorganization that may be submitted to the legislative body will provoke much debate. The general feeling among the congressional leaders is that nothing will be done about reorganization at this session.

The situation is giving the administration concern because it was proposed, when the new administration came in, that reorganization should go hand in hand with the introduction of the budget system. The budget system is in operation in a successful way, but the efforts of the President to get reorganization started have been unavailing.

Increased Appropriation for Children's Bureau

The Senate, by an amendment, has increased the appropriations of the children's bureau of the Department of Commerce for the coming year from $80,000 to $120,000, to be used to investigate and report on matters pertaining to the welfare of children and child life, and particularly to investigate questions of infant mortality and its causes. In a second deficiency bill, passed by the House of Representatives, an additional appropriation for the present fiscal year was also made to the children's bureau, to carry out the provisions of the maternity and infancy welfare act. The sum totaled $370,000.

Increased Appropriation for Veterans' Bureau

Deficiencies in the funds of the U. S. Veterans' Bureau to the total of almost $100,000,000 are appropriated by a deficiency bill now before Congress. In this measure, the bureau is given an additional $73,714,182 to continue its vocational rehabilitation program and $20,278,930 to provide medical and hospital services to disabled war veterans. The director of the bureau is also authorized to allot parts of the appropriations to the U. S. Public Health Service, and the board of managers of the national home of disabled volunteer soldiers, and to the War and Navy Departments, to be used in the care of ex-service men now under treatment.

Result of Neuropsychiatric Conference

The report of the conference of the neuropsychiatric consultants for consideration of certain problems, relating to care, treatment, compensation, and vocational training of beneficiaries of the U. S. Veterans' Bureau, suffering neuropsychiatric disorders, held February 10-13, at Washington, D. C., contains the following items with reference to special treatment:

Treatment of the Psychoneuroses.—In addition to existing provisions for the care of this special class of cases, treatment should, whenever possible, be preceded by a period of careful hospital observation to determine all the individual features of the case. Then treatment in an outpatient department by medical, social service, and vocational methods should be instituted.

Treatment of Epilepsy.—The following recommendations are made for the treatment of epileptics:

The mental and social problems of the epileptic beneficiary of the U. S. Veterans' Bureau render him unsuited for segregation as such, and it is wiser to handle the problem according to the progress of the disease.

Those with psychoses should be treated in hospitals in the district in which they reside.

The mild nonpsychotic epileptic should be given adequately supervised dispensary treatment only.

If possible, it would be highly desirable to establish a small, especially selected group for intensive study of the problem as a whole in or near some center well adapted for this purpose.

Constitutional Psychopathic States.—Your committee is convinced that psychiatric experience has shown that the mental abnormalities and social problems of those who are of psychopathic constitution, without complication by psychoneuroses or psychoses, can be adequately treated outside of hospitals.

It is recommended, if a thorough medical and psychiatric examination of the beneficiary of the U. S. Veterans' Bureau shows that the abnormalities of the beneficiary are due to psychopathic constitution, uncomplicated by psychosis, psychoneurosis, or physical abnormality, requiring hospital treatment, that the U. S. Veterans' Bureau arrange for their treatment through community supervision (social service).

Treatment of the Mentally Deficient.—Mental deficiency needs chiefly outpatient and follow-up treatment in which field work and group organization in special training centers for the purpose of establishing a proper stable level of adjustment and efficiency are most important.

Treatment of Alcoholics and Drug Addicts.—It is recommended that the small number of cases of alcoholism and drug addiction in which service connection exists shall be treated for the acute physical or mental condition in government neuropsychiatric hospitals.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 20, 1922.

The Claims of Comparative Pathology

Sir Clifford Albutt, in the *Times*, returns to a theme which he first expounded as long ago as 1888—the claims of comparative pathology. He has urged that pathologists work on fragmentary and often abstract lines, too often out of practical touch with disease. True it is that diseases in man, animal and plant are investigated with no little ardor and success, yet each school of students works in its own province, and pathology is still the last of the sciences in which the fertility of the comparative method is ignored. Success is to be won, not by frontal attacks, but by larger lines of strategy, in methods that create opportunities not only for larger movements but also for those chance occasions which open unexpected ways to the center. No thinking man is wholly ignorant of the benefit of the comparative method in the biologic sciences and far beyond them; in the study of evolution, as also in history, in anthropology, and in religion. What we need is an institute, or more than one, in which—to use the words of the foremost pathologist in the United States in a recent letter to Sir Clifford—"the first thought would be comparison." Yet we have no such machinery, no such team work; we have doctors of man, doctors of various animals, doctors even of plants, but each school revolves in its own orbit without cooperation of thought or demonstration. But much new interest is awakening in stock owners and pathologists; something is being done for interchange of experience and knowledge. The Royal Society of Medicine, in a generous and enlightened spirit, has just now thrown open its doors to the veterinary profession and to the students of the diseases of plants, in which disease can be investigated in its simplest forms. It is not improbable that a section on comparative pathology may be established. The British Medical Association, for its meeting in Glasgow next July, will probably arrange a discussion on the same subject, to which students of the diseases of plants and of animals will be invited, whether members of the association or not.

Anthropologic Problems

Sir Arthur Keith has begun a series of lectures, at the Royal Institution, on anthropologic problems of the British Isles, which have the usual fascination of his teaching. The world has been searched, he said, for the tailed and other strange races of humanity reported by ancient travelers and none have been found. But it was found that the 1,000 million which made up the population of the modern world, although they differed in feature, stature and color, and qualities of brain, were the progeny of a single ancestral type. If the search for strange types among living races had ended, that for fossil extinct types had just begun. It was revealing a bygone world, inhabited by types of humanity repulsive to our modern standards of beauty. The deeper we dug, more apelike did these fossil men become. There was only one explanation: Darwin's theory was true, and somehow evolution had shaped all the modern races of mankind out of one of these extinct simian-visaged stocks. In the world of humanity, evolution was working now at a greater rate than ever before. Empire builders were Nature's unconscious evolutionary agents. The art of empire building was not new; for 3,000 years before the birth of Christ, the Egyptians and Assyrians were trying their hands at it. In three centuries, the native population of great continents had been swept away and replaced by human races of a totally different kind. The colonization of Australia, a continent as large as Europe, illustrated why the modern wheel of evolution moved so quickly. Australia proved to be a raft or ark on which a sample of the primitive ancestry of modern man succeeded in floating down the flood of time to our day. The Australian lived in a manner representing a phase through which the native of Egypt and Mesopotamia passed 10,000 years ago. No wonder he shrank from European civilization, for we asked him to ascend at a single stride a ladder which it had taken us 10,000 years to scramble up. In recent years, discoveries had been made which threw light on the antiquity of the Australian. Four years ago, a fossil human skull found in Queensland was described by Dr. S. A. Smith of Sydney University. There could be no doubt that it was a primitive form of the Australian or Tasmanian type and represented a period corresponding to the ice age of Europe. The Australian aborigine was being traced toward an Asiatic cradle, and the period of his emigration southward was clearly much earlier than had been supposed.

Fatal Use of the Sigmoidoscope

An inquest has been held on a man who contracted dysentery while serving at Saloniki during the war and who was admitted to a hospital in Leicester for treatment. The sigmoidoscope was used three times for examining the intestine. On the third occasion, it seemed to pass higher up than on the previous occasions, but nothing further was noticed. Next day acute abdominal symptoms developed and laparotomy was performed. A perforation of the intestine was found and dealt with, but death ensued from peritonitis. The verdict returned by the coroner was death from general peritonitis following perforation of the lower intestine, caused by the use of an instrument by a competent person for the necessary examination for dysentery, and that death was due to misadventure.

Public Health and Economy

The last thing in the world which the present government appears to desire is economy. In spite of the crushing burden of the war, it has piled expense upon expense. As the resentment of the country has become louder and louder, the government has tardily and reluctantly attempted retrenchment. A committee of business men has been appointed, with Sir Eric Geddes as chairman, to devise a scheme of economy. The committee's report, which suggests "cuts" amounting to $375,000,000 in government expenditure, has just been published. The cut in the ministry of health's expenditure amounts to $12,500,000. The manner in which its expenditure has grown is shown by the following figures for the years 1913-1914 and 1922-1923, respectively: tuberculosis, $585,000 and $7,000,000; maternity and child welfare, $55,000 and $5,800,000. The state treatment of venereal diseases was instituted in 1917-1918, when the expenditure was $420,000: it now amounts to $2,100,000. The total expenditure of the ministry has increased from $585,000 to $16,000,000. The committee points out that all these grants are of percentages, and the extremely rapid increase of the expenditure indicates, in its opinion, the dangers of the system. It should be replaced by one of block grants. The cost of health insurance to the government (that is, in addition to the contributions of employers and employees) is now $52,500,000; but in the next year there will be a diminution of about $5,000,000, which has been brought about by reduction of the capitation grant of panel physicians, described in previous letters (THE JOURNAL, Sept. 26, 1921, p. 1349; Nov. 5, 1921, p. 1507; Nov. 19, 1921, p. 1667). The committee considers that the state's burden should be further reduced. It has recommended, therefore, that the contributions of employers and employed be increased by 1 cent per week. This has been done. The cost

of providing treatment for discharged soldiers under the ministry of pensions is $3,500,000. The ministry maintains 14,000 beds in its hospitals, but as there are 6,500 unoccupied beds in the naval and military hospitals a large number of the ministry's beds could be dispensed with. The allowances made to patients under treatment cost nearly as much as the treatment. Some of the allowances are on a too generous scale and should be reduced.

PARIS

(From Our Regular Correspondent)

Feb. 17, 1922.

Death of Dr. Victor Galippe

Dr. Victor Galippe died recently, aged 75. He was the son of a pharmacist of Grandvilliers, department of the Oise. He was born in this region in 1847 and began here the study of pharmacy. He became, successively, preparator of natural history and head of the laboratory of the Ecole des hautes études. He obtained his diploma as a pharmacist, but later he abandoned pharmacy to devote himself to medicine and to biologic research. He specialized in stomatology and published some interesting researches on the paradental epithelial débris and on the origin and the physiologic rôle of tumors that are derived therefrom. He combated the ideas generally accepted on the syphilitic nature of certain deformities of the teeth. His studies on the heredity of maxillary and dental anomalies led him to write a book, which attracted considerable attention, on the heredity of certain stigmas of degeneration in royal families. During recent years, he has presented to the Academy of Science various articles on the micro-organisms to be found in paper, amber, etc., which are resistant to the action of time (THE JOURNAL, May 22, 1920, p. 1468).

For a long period, Galippe, together with the late Professor Cornil, directed the affairs of the *Journal des connaissances médicales pratiques*. In 1902 he was elected a *membre libre* of the Academy of Medicine.

Natural Versus Synthetic Camphor

About two years ago, I mentioned the effort that was being made to manufacture synthetic camphor, by reason of the embargo that the Japanese government had placed on the natural product (THE JOURNAL, Feb. 14, 1920, p. 473). Monsieur André Dubosc has recently outlined in a very instructive way the mad and victorious struggle in which the Japanese trust became engaged with the European manufacturers. Synthetic camphor proved to be of such a quality as to constitute a dangerous competitor of the products of the distilleries of Formosa. Its use in celluloid, especially, gave perfect results. This being the case, the Japanese trust tried at first to enter into negotiations with the manufacturers of the artificial product, offering to buy, at good prices, their total output, which would have been sold under the Japanese mark. These offers were not accepted, our manufacturers hoping to become the masters of the market. The Japanese trust then began to lower its price so as to undersell synthetic camphor. It commenced to bleed white the forests of Formosa, thus doubling and tripling production. At the same time, through purchases made by its agents in Bordeaux, it succeeded in raising the price of turpentine, which is the base for synthetic camphor. The price of turpentine rose more than 100 per cent., which proved ruinous to our manufacturers. By lowering finally the price of 1 kg. (2.2 pounds) of camphor to 3 francs, with no limitations as to quantity, which price included freight charges to all European and American ports, the Japanese trust succeeded in giving the *coup de grâce* (finishing stroke) to the manufacture of synthetic camphor. The factories closed, having gone into bankruptcy. Their equipment was sold and scattered to the four winds. After allowing sufficient time to elapse; that is, when it appeared that there was no possibility of the manufacturers of synthetic camphor getting on their feet again, the Japanese trust raised its prices to 110 and even 120 francs per kilogram. The present price is around 25 francs.

The world's consumption of camphor, in 1914, was approximately 18 million pounds (8,181,818 kg.), and, since the regeneration of camphor forests is slow, it will be seen that there is still a place for synthetic camphor.

Death of Paul Mounet

The well known artist of the Comédie-Française, Paul Mounet, who died recently, was an *évadé de la médecine* (deserter from the ranks of medicine). He was a successful student of medicine, and continued his medical studies until he secured his doctorate. But, following the example of his illustrious brother, Mounet-Sully, whose entrance into the field of tragedy was so strikingly brilliant, Paul Mounet conceived a passion for the stage and soon after became affiliated with the stock company of the Odéon. The two brothers were closely associated with the late surgeon Pozzi. At the home of the latter, memorable soirées were held at which the great poet Leconte de Lisle was pleased to hear his poems recited by the Mounet brothers.

The Rockefeller Foundation in Relation to the Suppression of Tuberculosis in France

Dr. F. Williams, director of the Rockefeller Foundation, delivered an address at the Musée Social on the work accomplished by the foundation in France. In 1916, numerous reports reached the United States to the effect that tuberculosis was increasing in France at a rapid rate—not only in the army but also among the civilian population. In January, 1917, the Rockefeller Foundation sent Dr. Herman Biggs to France to study the situation and to learn whether or not it was possible to undertake a campaign against tuberculosis. As the result of this inquiry, the subcommittee of the Rockefeller Foundation, known as the International Health Board, organized a commission composed of Dr. Livingston Farrand (chairman), Dr. James Alexander Miller, Prof. Selskar M. Gunn, Dr. Charles E. White and Mr. Homer Folks, who arrived in France in July, 1917. Soon after the close of the war, the various members of this commission returned to the United States. The present director, Dr. Williams, took over the supervision of the work in March, 1919.

From the beginning, it seemed evident that a program which would require the construction of hospitals and sanatoriums would not be acceptable, not only by reason of the dearth of man power and building material but also because it was realized, at the end of the war, that a more extensive and a more permanent antituberculosis campaign was needed than such as would be involved in the mere construction of buildings. It was hoped that a nation-wide movement might be launched, so that France, as a whole, might eventually be aroused to take part in the campaign against tuberculosis. Accordingly, measures were taken to awaken public interest in the movement, to influence public opinion and to arouse the popular imagination, so that the authorities might be induced to adopt effective measures. As a focus of demonstration and influence, the foundation established in the department of Eure-et-Loir an antituberculosis organization similar to those that exist in America. A similar demonstration, on a smaller scale, was made in the nineteenth arrondissement of Paris.

A propaganda department was organized under the direction of Professor Gunn. The most essential feature of the organization consisted of so-called *équipes de propagande* (propaganda crews or teams), the outfit of such a team com-

prising an autotruck and a complete motion picture equipment, together with a dynamo-electric machine, so that the apparatus could be used in the small towns and villages where no street current was available. The personnel consisted of an American woman who was the director; two lecturers (usually a man and a woman), a courier and a mechanician. The campaign was always begun in the schools. A talk of from fifteen to twenty minutes was followed by a motion picture exhibition demonstrating certain phases of the antituberculosis campaign. The pictures were specially adapted to children. All towns and villages having a population of more than 3,000 were visited. Leaflets setting forth certain phases of the antituberculosis campaign were also distributed among the children. Lectures for adults were given later. The more comprehensive lectures were given only in the larger towns. The prefect or some other official presided. After the lecture, leaflets were distributed among the audience, and more comprehensive pamphlets were given out to invited guests of note. During 1919 and 1920 and the first half of 1921, four teams were at work in France. More than a thousand towns and villages in fifty-three departments were visited. Approximately a million adults and a million children attended the talks and lectures, and 6,000,000 leaflets and pamphlets were distributed. In addition, a special propaganda was carried on directly by the bureau by sending out tracts and brochures, 6,000,000 pieces of printed matter having been distributed in this manner to all the departments of France. A central record office was organized in each department, with which are combined antituberculosis dispensaries. The record office (1) keeps for general inspection a list of all the charitable organizations in the department, from which various forms of aid may be secured; (2) keeps on file the record cards of all the patients watched over by the dispensary, and in case any patient moves to another department or changes his residence within the department, the central record office informs other dispensaries of the fact, so that such individuals may not be deprived of the advantages of the dispensary. Furthermore, the central record office receives the admission and discharge reports of the hospitals and the sanatoriums, so that when a patient leaves a sanatorium in one department to return to his home in another department, a visiting nurse, skilled in hygiene, may visit him on his return. Central record offices are functioning now in seven departments, and nine more are about to be established.

The Rockefeller Foundation has also organized many graduate courses in tuberculosis. These courses, the first of which was given in October, 1919, are now conducted four times a year under the supervision of Professors Léon Bernard, Bezançon and Sergent and of Dr. Rist. The Rockefeller Commission offers to physicians who have been selected to occupy a post in a dispensary (or who are fitting themselves for such an appointment) a scholarship, which defrays, in part, the expenses of their sojourn in Paris, and includes also their traveling expenses to and from Paris and the payment of the laboratory fees exacted by the Faculté de médecine. The Rockefeller Commission has granted such scholarships to 264 French and to seventeen Belgian physicians. Italian, Spanish, Roumanian, Czechoslovak, South American, Canadian and English physicians have likewise attended these graduate courses.

To judge of the results secured: In 1917, there were only ten antituberculosis dispensaries, none of which employed visiting nurses. Today there are 350 dispensaries, 250 of which have at least one visiting nurse. About half of the dispensaries are in charge of physicians who have recently taken a graduate course in tuberculosis. There are now eight schools for the training of visiting nurses in the hygienics of tuberculosis; in 1917 there was only one.

PEKING, CHINA

(From Our Regular Correspondent)

Jan. 1, 1922.

Dissection and Postmortem Examinations in China

Not long ago, one of the famous scholars of China said that the fundamental reason why the science of medicine in China had not kept pace with that of the West was that in China they had stopped dissection of the human body. In a land steeped in a superstition in which the spirits of the departed play a very active part, and where ancestor worship is still a dominating force, it is not surprising that dissection of the human body has been both difficult and unpopular. And yet China is becoming enlightened. A short time after the founding of the republic, a necropsy was performed at the hospital in Soochow. It was considered a great event. Prominent officials were present and a photograph was taken, which was later inscribed, "The first dissection of the human body in China in 4,000 years." Since that time, opinion has been rapidly changing among the more intelligent classes, and among the less intelligent as well, where there is contact with the West. In Peking, the high officials profess great interest in the matter when they are approached and asked for help. "Certainly," they say, "medical schools must have bodies for dissection, and hospitals must make postmortem examinations for the advancement of science. We will see what can be done about it." Unfortunately, authority lies not with these high officials but with the police. There is great power in the hands of the lower officials, who are close to the people, both in the country and in the cities. The higher officials may suggest, but they do not command. Similarly, the high officials in Peking cannot, or perhaps will not, command the police to cooperate with the medical schools in the matter of obtaining necropsies or dissecting material.

It was with considerable difficulty that the following concessions were obtained from the district police in May, 1921:

1. When a patient dies in the hospital, his relatives, if he has any, may give consent to a necropsy. When the consent is obtained, the police must be notified and the relatives must sign the consent slip in the presence of the police officer.
2. Sick paupers in the working squads of the sanitary department may be sent to the hospital for free treatment. If they are seriously ill and die, and the body is not claimed by a relative, the police must be notified by letter. An officer must come to inspect the body. It must then be embalmed and kept for two months. If no relative claims the body during that time, it may then be used for dissection.
3. A similar procedure must be carried out with all of those who die in the hospital whose bodies are not claimed by relatives.

In the practical working out of this system, it is found that even after relatives have consented to a postmortem examination, great inconvenience is caused by the delay in the response to summons of the police.

The Departure of Dr. Francis Peabody of Boston

Dr. Francis W. Peabody, professor of medicine at Harvard, who has been acting in an advisory capacity and holding clinics for the department of medicine of the Peking Union Medical College during the first trimester, has left for home. On his way back, he will visit the medical schools of the Shantung Christian University at Tsi-nen-fu and of the Yale-in-China mission at Changsha.

The Coming of Dr. Brackett of Boston

Dr. E. G. Brackett, editor in chief of the *Journal of Orthopedic Surgery*, formerly colonel, M. C., U. S. Army, and chief of the orthopedic service of the Massachusetts General Hospital, will come to Peking in May and give lectures and hold clinics in orthopedic surgery, under the auspices of the department of surgery of the Peking Union Medical College.

A Convalescent Hospital

The demand for a place where convalescent patients can complete their treatment outside of the hospital has resulted in the canvass of the staff of the Peking Union Medical Col-

lege and in the collection of a fund sufficient to establish a convalescent hospital not far from the college. It has a capacity of twenty-five beds and will receive patients directly from the wards of the hospital or patients coming from distant places who have to wait for a hospital bed. If there is room, friends of such patients may also be accommodated, for short periods. The estimated budget for this much needed service is slightly less than $4,000 (Mexican) a year.

Chinese Paleontology

The Geological Survey of China has undertaken the preparation and publication of a series of monographs on the remains of the animals and plants which existed in China from the remotest past of its geological history, to the period which preceded the one in which we live today. This is one of the most important and far-reaching scientific undertakings ever contemplated by any eastern nation. The work will be issued under the general title of "Palaeontologia Sinica." For its preparation, the services of trained specialists have been secured, which will insure scientific accuracy and value. The work is divided into four series. Series A will cover the fossil plants which abound in so many coal formations. Series B will contain the descriptions and illustrations of the extinct invertebrate animals which are so numerous in most of the rocks of China. Series C will be devoted to the extinct vertebrates. Series D will describe ancient man in China. Dr. Davidson Black, professor of ayatomy at the Peking Union Medical College, will contribute articles in the last series. Several large deposits of ancient human bones recently found have been sent to Peking for examination.

The first volumes of the "Palaeontologia Sinica" are now in press.

A New Hospital in Shanghai

A new departure in the practice of medicine in China has been made by a group of foreign trained Chinese physicians and surgeons in Shanghai, who have grouped themselves in order to practice medicine along the lines of group practice in America. They are taking over the Chinese Red Cross hospital, and after complete renovations, will open it for service in general medicine, general surgery, obstetrics and gynecology, orthopedics, and eye, ear, nose and throat diseases, with equipment for laboratory and roentgen-ray examinations. The hospital will have a capacity of sixty beds, half of which will be for ward cases and half for private cases. There will be the freest consultation on cases, and the charges for service will be made by the hospital and not by the individual physician or surgeon.

Marriages

GIOAICHINO PAUL GIAMBARRO, Brooklyn, to Miss Adeline Gloria Sinkiewicz of St. Nicholas, Pa., February 6.

WILLIAM H. BARR, Fountain Springs, Pa., to Miss Marian Meredith of Philadelphia, March 2.

WALTER DICK, Brookville, Pa., to Miss Mary Katherine Geist at Brookville, December 31.

EDWARD D. KING, Covington, Ky., to Miss Genevieve Stuart Race of Cincinnati, February 22.

CHARLES HOLLISTER JUDD to Mrs. Emma McLaughlin, both of Detroit, January 26.

MAXEY GREGG HOFFMAN, Bunker Hill, W. Va., to Miss Ruth Knott, recently.

JOSIAH F. REED to Miss Anna Duncan Wills, both of Harrisburg, Pa., March 15.

JULIUS J. VALENTINE to Mrs. Zola S. Kerns, both of New York City, March 2.

LEON J. GRANT to Mrs. Jessie Morris, both of Brooklyn, February 22.

WILLARD D. MAYER to Miss Adele Siegel, both of Detroit, February 8.

Deaths

Albert LeRoy Shelton, Batang, Tibet, China; Kentucky University Medical Department, Louisville, 1903; was killed by Chinese bandits, February 17. Dr. Shelton was born in Indianapolis, June 9, 1875; during the Spanish-American War enlisted with the 22nd Kansas Regiment; formerly resided in Anthony, Kansas. He was appointed medical missionary of the Disciples of Christ (Christian) Church and was stationed at Batang. In 1920 he was captured by Chinese robbers and held for $50,000 ransom, but on his release continued his work, and received a permit in 1921 from the Dalai Lama of Tibet to establish a hospital at Lhasa and train medical workers, in recognition of his work among Tibetan soldiers. It was while on this mission that he was murdered.

Harris Graham, Beirut, Syria; University of Michigan, Ann Arbor, 1885; professor of pathology and practice of medicine in the School of Medicine of the American University of Beirut since 1889; formerly served on the Board of Missions to Central Turkey as a medical missionary; conversed freely in Arabic, Turkish, French, German, Italian, modern Greek and Armenian; member of the executive committee of the Lebanon Hospital for the Insane, Beirut; died, February 27, aged 60.

Joseph Lane Hancock, Chicago; Chicago Medical College, 1888; member of the Illinois State Medical Society and the Chicago Academy of Medicine; fellow of the Entomological Society of London, England; member of the American Association for the Advancement of Science; also an artist and naturalist; author of Tettigidae of North America, Tettigidae of Ceylon and other works; died, March 12, at the Michael Reese Hospital, aged 57, from heart disease.

Lewis Holland Munn ✦ Topeka, Kansas; State University of Iowa College of Medicine, Iowa City, 1880; Bellevue Hospital Medical College, New York City, 1882; treasurer and formerly president of the Kansas Medical Society; specialized in surgery; chief surgeon of Stormont Hospital; member of the Western Surgical and Gynecological Society; and the Western Medical Association; died, February 24, aged 64, from cerebral hemorrhage.

Sylvester Utter, Paterson, N. J.; Medical Department of the University of the City of New York, 1885; member of the Medical Society of New Jersey; former mayor of Hawthorne, N. J.; served as a member of the state legislature; for eleven years was director of revenue and finance of Hawthorne County; formerly consulting physician to St. Joseph's Hospital and the Demilt Dispensary, New York City; died, March 1, aged 61.

Benjamin F. Calhoun, Beaumont, Texas; Texas Medical College and Hospital, Galveston, 1875; member of the State Medical Association of Texas; formerly president of the state board of health; formerly mayor of Beaumont and president of the Southern Texas Medical Association; at one time member of the school board and city physician; Confederate veteran; died, recently, aged 73.

Alexander W. Fairbank ✦ Chazy, N. Y.; Albany Medical College, Albany, N. Y., 1874; consulting physician to the St. Lawrence State Hospital, Ogdensburg, for twenty-one years; member of the board of education; twice served as member of the state legislature; member of the medical board of the Champlain Valley Hospital, Plattsburg, N. Y., where he died, February 18, aged 69, from pneumonia.

Stanislaus Brzozowski, Chicago; Louisville Medical College, 1876; formerly health officer of Madison County, La., and received a gold medal from the Louisianians for his services during the yellow fever epidemic there; at one time superintendent of the Marine Hospital, Vicksburg, Miss.; died, February 23, aged 78, at the home of his son, Louisville, Ky., from heart disease.

Charles C. Givens, Lewis, Ind.; Louisville Medical College, Louisville, Ky., 1882; member of the Indiana State Medical Association; veteran of the Civil War; died, February 24, aged 72, from pneumonia which developed from concussion of the brain suffered six weeks previously when the automobile in which he was driving was struck by a train.

Charles Waugh Karsner, Philadelphia; Jefferson Medical College, Philadelphia, 1878; Hahnemann Medical College and

✦ Indicates "Fellow" of the American Medical Association.

Hospital, Philadelphia, 1875; served in the U. S. Navy, during the Civil War; former assistant medical inspector of Philadelphia; formerly member of the city council;" died March 1, aged 71, following an operation.

William Sterling Maxwell, Chicago; Medical Department of the University of Wooster, Cleveland, 1891; on the medical board of the Order of the Sons of St. George; served during the late war as medical examiner for the British Army; on the staff of the Lakeside Hospital, where he died, March 9, aged 57, from lobar pneumonia.

Allen MacKenzie Baines, Toronto, Ontario, Canada; University of Toronto Faculty of Medicine, Toronto, 1878; Trinity Medical College, Toronto, 1878; L.R.C.P. London, and L.R.C.S. England; associate professor of clinical medicine and pediatrics, University of Toronto; died, January 12, aged 68.

Martin M. Kittell ✠ Jamaica, N. Y.; Medical Department of the City of New York, 1891; member of the state legislature 1900; visiting physician to the Mary Immaculate Hospital, the Jamaica Hospital and the Queensboro Hospital for Contagious Diseases; died, March 1, aged 56, from pneumonia.

Herbert Barker Mason ✠ Calais, Me.; Boston University School of Medicine, Boston, 1877; formerly president of the Maine Medical Association, and secretary of the Washington County Medical Society; member of the American Association of Anesthetists; died, March 2, aged 66.

Jesse Smith DeMuth ✠ Pittsburgh; Bellevue Hospital Medical College, New York City, 1897; veteran of the Spanish-American War; major M. C., U. S. Army, during the World War; died, February 21, at the Presbyterian Hospital, aged 49, from pneumonia.

George Evans Calhoun ✠ Uhrichsville, Ohio; Kentucky School of Medicine, Louisville, 1894; served during the World War as lieutenant M. C., U. S. Army; died, February 23, aged 52, at the home of his brother, Canton, Ohio, from a complication of diseases.

John Clinton Shuman, Akron, Ohio; College of Physicians and Surgeons, Keokuk, Iowa, 1887; Jefferson Medical College, Philadelphia, 1890; member of the Summit County Medical Society; died, March 24, aged 69, from cerebral hemorrhage.

Silas W. Hunter, Wiseburg, Md.; College of Physicians and Surgeons, Baltimore, 1874; former resident physician at Bayview Asylum, Baltimore; died, January 19, aged 72, at the Mercy Hospital, Baltimore, from carcinoma of the stomach.

Joseph Paul Corgan, Capac, Mich.; Georgetown University School of Medicine, Washington, D. C., 1915; served in the Philippine Islands during the late war with the rank of lieutenant M. C., U. S. Navy; died, February 23, aged 32.

Jacob Jones Wilson ✠ Cumberland, Md.; College of Physicians and Surgeons, Baltimore, 1871; formerly served on the city council; president of the staff of the Western Maryland Hospital, Cumberland; died, February 24, aged 73.

Charles C. Wallace, Black Lick, Pa.; Jefferson Medical College, Philadelphia, 1910; served during the World War, M. C., U. S. Army, with the rank of lieutenant; died, February 22, aged 41, at Josephine, from pneumonia.

George Giles Gobar, Muscoda, Wis.; Rush Medical College, Chicago, 1891; member of the State Medical Society of Wisconsin; died, March 1, aged 53, from perforated duodenal ulcer with peritonitis and internal hemorrhage.

Walter Vose Gulick ✠ Seattle, Wash.; Rush Medical College, Chicago, 1901; formerly member of the staff of the Mayo Clinic, Rochester, Minn.; specialized as a neurologist; died recently, aged 51, from aortic stenosis.

William Henry Ford, Herrin, Ill.; St. Louis College of Physicians and Surgeons, 1898; served during the World War as captain, M. C., U. S. Army; died, February 14, aged 44, at Holywood, Cailf., from pneumonia.

Franklin H. Erb, Baltimore; Southern Homeopathic Medical College, Baltimore, 1902; member of the Volunteers of America Hospital; died, February 28, aged 60, from septicemia and acute articular rheumatism.

Elannus R. Birch, Denison, Texas; Miami Medical College, Cincinnati, 1879; member of the Ohio State Medical Association; member of the school board; surgeon for the Katy Railroad; died, February 27, aged 71.

John H. Wallace, Detroit; Western University Faculty of Medicine, London, Ontario, 1921; formerly of Auckland, New Zealand; died recently, aged 32, at the Detroit Receiving Hospital, from miliary tuberculosis.

Charles Earle Locke, Denver; Bellevue Hospital Medical College, New York City, 1908; veteran of the Civil War and of the Spanish-American War; served two terms in the state senate; died, February 18, aged 76.

Santos Defendini Rodriguez, Adjuntas, Porto Rico; Bennett Medical College, Chicago, 1914; member of the Medical Association of Porto Rico; died recently in France from pulmonary tuberculosis, aged 31.

Harry Stephen Stone, Franklin, Pa.; Sioux City College of Medicine, Iowa, 1898; member of the Medical Society of the State of Pennsylvania; served during the World War; died, February 16, aged 46.

James Lucilius Neel, Bowling Green, Ky.; University of Nashville, 1873; member of the Kentucky State Medical Association; died suddenly, February 28, from cerebral hemorrhage, aged 72.

George Alexander Oviatt, South Sudbury, Mass.; Medical Department of Columbia College, New York City, 1875; member of the Massachusetts Medical Society; died, February 26, aged 72.

Alexander Bryson Osborne, Hamilton, Ontario, Canada; McGill University Faculty of Medicine, Montreal, 1886; lieutenant colonel, C. A. M. C.; died January 28, aged 59, in London, England.

Wilbur E. Winsett ✠ Sioux Falls, S. D.; Chicago Homeopathic Medical College, Chicago, 1895; physician to the state penitentiary, Sioux Falls; died, January 15, from heart disease, aged 53.

James J. Sinclair, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1883; College of Physicians and Surgeons, Chicago, 1888; died, March 12, aged 66, from heart disease.

William P. Kochenour, Rego, Ind.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1884; died, February 21, aged 73, from pneumonia.

John B. Nesbitt, Sycamore, Ill.; Northwestern University Medical School, Chicago, 1897; member of the Illinois State Medical Society; died, February 28, aged 48, from pneumonia.

Francis George Staples ✠ Brooklyn; Long Island Hospital College, Brooklyn, 1917; member of the Medical Society of New Jersey; died, February 8, aged 41, in Jersey City, N. J.

Anna M. McAllister ✠ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1873; specialized in otology, laryngology and rhinology; died, recently, aged 72.

John Alexander Tyler ✠ Crescent City, Calif.; Vanderbilt University Medical Department, Memphis, Tenn., 1882; died suddenly, February 22, aged 66, from angina pectoris.

H. F. White, Mount Vernon, Ill.; St. Louis Medical College, St. Louis, 1859; died, January 2, aged 87, at Mountain Park, Okla., from heart disease.

Jason Willard Jackman, Bad Axe, Mich.; Detroit Medical College, 1879; member of the Michigan State Medical Society; died, February 13, aged 73.

Edward Watkins Christopher, Blackey, Ky.; University of Louisville Medical Department, Louisville, 1921; died recently from pneumonia, aged 26.

Nathaniel Howard Boone, Chandlerville, Ill.; University of Nashville Medical Department, Nashville, Tenn., 1860; died, February 16, aged 85.

James Monroe Carswell ✠ Jacksonville, Fla. (licensed by the Florida State Board of Medical Examiners); died, January 30, aged 51.

J. E. Vann, Trinity, Texas; Louisville Medical College, Louisville, Ky., 1882; died, January 15, aged 66, from cerebral hemorrhage.

William Towle Souther, Worcester, Mass.; Medical School of Harvard University, Boston, 1878; died recently, aged 71.

Henry W. Jones, Spiceland, Ind.; Cincinnati College of Medicine and Surgery, 1875; died, February 25, aged 77.

John Tenbrook Newton, St. Bernice, Ind.; Rush Medical College, Chicago, 1879; died, January 15, aged 73.

James Lyman Congdon, Riverside, Ill.; Rush Medical College, Chicago, 1865; died, March 3, aged 80.

William H. Sigler, St. Paul (license, Minnesota, years of practice); died, February 18, aged 80.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

WARN'S EPILEPSY TREATMENT

In this department of The Journal for Sept. 24, 1921, there appeared an article on "Maghee's Epilepsy Treatment" a mail-order affair operated by Thomas G. Maghee, M.D., Lander, Wyoming. The Warn's Remedy Company of Los Angeles, Calif., is in the same business as Maghee and there is a striking resemblance both in the products of the two concerns and their advertising methods.

It appears that Warn's Remedy Company is a trade name adopted by Katherine Warn and her son Stanley J. Warn. A comparison of the claims made, respectively, by the Warn Remedy Company and Thomas G. Maghee, indicates a more cautious attitude on the part of the Los Angeles concern. The italics are ours:

Warn's claims	Maghee's claims
"In a day or two after commencing the one dose a day, the drowsiness *should* wear off . . ."	"The drowsiness *will* wear off in a day or two after commencing one dose a day . . ."
"Seizures *should* cease to occur at once."	"Seizures *will* cease to occur at once."
"Nervousness *should* decrease."	"Nervousness *will* decrease."
"Complexion *should* clear up, and the mind *should* improve rapidly."	"Complexion *will* clear up, and the mind *will* improve rapidly."

Like the Maghee nostrum the "treatment" sells for $5. An order was sent for one "treatment" and the material turned over to the A. M. A. Laboratory. A summary of the laboratory report follows:

"One original box of 'Warn's Epilepsy Treatment' was submitted to the Chemical Laboratory for examination. The circular accompanying the box bore the statement: 'A treatment containing no bromides, opiates or other narcotics or any habit forming drugs.' In the box were 50 small sized capsules, containing a powdered mixture of black color; the average content of each capsule was 0.093 gm. (1.4 grains). Qualitative tests indicated the presence of wood charcoal, phenobarbital (luminal) traces of iron, magnesium, calcium, potassium and sodium (these traces probably being derived from the charcoal). The amount of ash derived from the preparation was 3.5 per cent.; most of the ash consisted of silicon dioxid (sand). Quantitative determinations indicated the following:

Charcoal	28 per cent.
Phenobarbital (luminal)	72 per cent.

"Each capsule of 'Warn's Epilepsy Treatment' contains, essentially, 0.066 gm. (1 grain) of phenobarbital, to which has been added some charcoal. 'Warn's Epilepsy Treatment' differs but slightly (by absence of bismuth subnitrate) from Maghee's Epilepsy Treatment, analyzed a few months ago."

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Devonia Mineral Water.—In May, 1919, the Devonian Mineral Springs Company, Lorain, Ohio, consigned a quantity of "Devonia Mineral Water" to Kentucky. The water was declared misbranded because it was falsely and fraudulently represented as a natural tonic and reconstructor, a combination of healing properties, that it assisted nature to adjust itself, that it was indicated in chronic indigestion, constipation, rheumatism, neuralgia, nervous debility, high blood pressure, hardening of the arteries and anemia, that it was effective in skin and blood and scalp affections, etc. It was declared further misbranded because the label was false and misleading with respect to the alleged formula and, furthermore, because the label was not plainly and conspicuously marked to show the true quantity of the contents of the bottle. In January, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9560; issued Dec. 10, 1921.*]

Jackson's Home Rheumatism Remedy.—In January and May, 1919, Mark H. Jackson, Syracuse, N. Y., shipped to Massachusetts a quantity of the Home Rheumatism Remedy. This nostrum, when analyzed by the federal chemists, was found to be composed of aloes, licorice, cornstarch and Blaud's mass, each tablet containing ⅓ grain of ferrous (iron) carbonate. The product was falsely and fraudulently represented to be effective as a treatment, preventive, remedy and cure for rheumatism, gout, lumbago, sciatica and scrofula "when in truth and in fact it was not." In October, 1920, Jackson pleaded guilty and was fined $100.—[*Notice of Judgment No. 9580; issued Dec. 10, 1921.*]

Correspondence

"IS THE CONTROL OF DIPHTHERIA LEADING TO ERADICATION?"

To the Editor:—In The Journal, March 4, p. 630, Dr. Cumming draws a conclusion which we believe needs modification. In considering present procedures for the control of diphtheria he does not question the value of the Schick test and of toxin-antitoxin. The immunity, however, produced by toxin-antitoxin is of active and not passive type. The duration of this immunity (seven years in persons observed for that length of time) makes its use of economic value, and at least carries the child through the age period of greatest danger. Obviously, the greater number immunized, the greater will be the reduction in the *incidence* as well as the mortality of this disease. Cumming's argument that immunization must be carried out with each successive generation is sound, but shall smallpox vaccination be abolished because it must be given to each generation? Any competent physician can administer toxin-antitoxin without a previous Schick test. Therefore a well organized health department is not essential.

There has been no evidence that immunity itself is a stimulus to the carrier condition; it is known, however, that to be a carrier a person must be immune, virulent diphtheria bacilli must have entered in or have reached the outside of his body, and these organisms must have found a suitable field for development. It must be kept in mind that an immune person may become a carrier while a nonimmune may become a carrier only after he has had the disease and recovered from it. Emphasis must be placed on the fact that the carrier condition depends on harboring *virulent* diphtheria organisms and not organisms having diphtheria morphology.

From the work of Weaver, who isolated virulent organisms from nine carriers, all of whom showed a pathologic condition of the throat or nose or both; of Neuman, who found no diphtheria organisms in 111 normal throats but found them in seven or eight of ninety-five persons with nasal trouble; of Guthrie, who found a pathologic condition of the throat at certain times in all six of the carriers he studied; and from the observations of others, including Reeder, Kretzsch-

mer, Lewis, Albert and Moss, it is probable that a pathologic condition of the throat or nose produces a more suitable field for the persistence of these organisms than does the normal throat or nose. If this is true, then the number of carriers will be reduced in proportion to the correction of these defects without reference to immunity.

Carriers in the future will be discovered as in the present by (1) routine examinations in schools, hospitals, institutions, etc.; (2) release cultures, and (3) epidemiologic investigations with laboratory findings. I cannot agree with the statement put forth that "wholesale immunization would give a false sense of security and obscure the necessity of searching for carriers." Would not the mere reduction in incidence stimulate more interest in the residual cases?

To eradicate a disease of the respiratory type by means of sanitary measures directed at its means of transfer is a very difficult problem in comparison with eradication of one transferred by an intermediate host (as in yellow fever); and, while the time may come in the future when the "populace" will be so well educated that the transfer of the respiratory type of disease will be a rarity, in the meantime I fully believe that the use of all biologic measures possible to reduce morbidity and mortality in diphtheria as well as other diseases is to be encouraged.

EMERSON MEGRAIL, M.D., Cleveland.

To the Editor:—In THE JOURNAL, March 4, p. 630, Dr. James Gordon Cumming does some very agile figuring to prove that the use of antitoxin has failed to reduce the morbidity in diphtheria since 1890. It seems to me that he has failed to take into consideration the fact that a larger proportion of cases are now diagnosed than at that time—that in 1890 many cases were diagnosed tonsillitis and croup which today, with the more general resort to the laboratory, would be recognized as diphtheria. As most of these patients recovered, the mortality rates given for 1890 were excessive, and, accepting his figures otherwise as correct, while the reduction in mortality would not be so great as he states, there would be an actual reduction in morbidity. Of course, that has no effect on the actual number of lives saved by antitoxin, which is not questioned.

The hypothesis that an extensive application of the Schick test, with active immunization of susceptibles, and the consequent production of a larger number of persons immune to diphtheria, would result in a larger number of carriers, and defeat the end in view, appears to me rather "far fetched," and hardly sufficient to justify any restriction of the use of that test, which Dr. Cumming acknowledges to be "invaluable." Conceding the general accuracy of his contention as to the small effect of antitoxin on morbidity, I believe he is unduly pessimistic.

CHARLES W. ALLEN, M.D., Tarentum, Pa.

"A MODIFICATION OF THE FLAGG ANESTHESIA APPARATUS"

To the Editor:—The modification of the Flagg anesthesia apparatus submitted by Dr. Richmond Douglass (THE JOURNAL, March 4, p. 648) seems to demand some comment. About seven years ago, I submitted a sketch showing this air vent to my manufacturer, along with a number of other suggestions for the improvement of the inhaler. I failed to press these changes as a routine improvement for several reasons: 1. The use of an air valve, while certainly easier of manipulation and requiring less attention from the anesthetist, has a tendency to change the method from a closed method to a semiopen or approximately open method. 2. A constantly acting air valve reduces the normally large tidal volume, thereby impeding ether vaporization and affecting the control. 3. It is impossible to judge the quality of the respirations when an air valve is constantly employed. 4. I have invariably returned to my closed method after having resorted to an improvised air valve, such as may be readily made by stripping back the neck of the bag a little distance from its normal position. 5. In an experience of about 10,000 anesthesias personally administered and some 15,000 administered by interns under my instruction, the control and progress of the anesthesia has been satisfactory. 6. There is less waste of ether and less saturation of anesthetist and surgeon when a strictly closed method is employed, this being of some considerable consequence to the active anesthetist.

It is granted that an air valve is helpful to the beginner in the use of closed methods.

PALUEL J. FLAGG, M.D., New York.

"A PLETHORA OF PHYSICIANS"

To the Editor:—Referring to the statement of a Texas physician relative to the fact that there is a surplus of physicians in rural Texas, I am sure that the same condition holds true in rural eastern Nebraska. Emphatically, there is no shortage. Most of the towns contain two and three times more physicians than are necessary.

PAUL R. HOWARD, M.D., Norfolk, Neb.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

VERATRUM VIRIDE IN THE TREATMENT OF PNEUMONIA

To the Editor:—Please outline the present authoritative medical opinion in regard to the therapeutic use of veratrum viride, especially in pneumonia. Have any recent pharmacologic studies been made of the drug? Recently I came in contact with a physician of good repute who claims to have used this drug in the treatment of both lobar pneumonia and bronchopneumonia, with good results, in a general practice for about forty years. He advises the use of the drug as early as the diagnosis is made, but has had success when it was started late in the disease. He gives 6 minims (0.37 c.c.) of the tincture by mouth every hour, until the pulse rate is between 75 and 85. The pulse is watched carefully during this period. The frequency of dosage is then decreased in order to keep the pulse rate between the foregoing limits until the disease has progressed, so far as the acute pneumonic symptoms are concerned, to a favorable condition. He asserts that he has had great success with this drug, and that in treating hundreds of pneumonia patients over this long period, he has not had a death in an uncomplicated case. He also claims that several good physicians have adopted the use of this drug after being impressed with its success. This sounded so convincing that I am writing for an opinion.

L. H. JOHNSON, M.D., Washington, D. C.
Lieutenant, M. C., U. S. Navy.

ANSWER.—Authoritative medical opinion is distinctly adverse to the routine use of veratrum viride in the treatment of uncomplicated pneumonia. Claims like those made in favor of veratrum viride are advanced for quite a number of other drugs, none of which have borne critical investigation. The fundamental error, on the part of those who make these claims, lies in inadequate control observations.

It is not sufficiently appreciated that the natural tendency of the pneumonia patient is to get well, and that it is usually complications that are responsible for a fatal issue. The dictum of Dujardin-Beaumetz that "there is no treatment of pneumonia, there is only a treatment of the pneumonic" has become more and more firmly established with every step in advance in our knowledge of pneumonia.

Pneumonia is not an entity from the etiologic standpoint, as quite a number of different types of bacteria may be responsible for the disease; hence we cannot hope for a routine and uniform etiotropic therapy in this disease.

The pathology of lobar pneumonia and bronchopneumonia is so different that it is *a priori* improbable for any one agent to have a favorable effect on the pathology of these two conditions. Advocates of veratrum viride, aconite and venesection believe that, by the depression of the circulation produced by the treatment, they might lessen the extravasation of blood into the air vesicles and to this degree the involvement of the lungs. The lack of demonstrable success of venesection has led to the discarding of this once almost universally employed mode of treatment of pneumonia. Is it possible for any one to conceive that this would have happened, if the patients that were not bled fared one bit worse than those who were? Veratrum and aconite have been advocated as means of "bleeding and yet saving the blood." It is unreasonable to expect any more, if as much from these agents as from venesection. If there is a shadow of theoretical justification for the use of circulatory depressants in the early stages of lobar pneumonia, by what stretch of imagination can we believe any benefit to come from depressing the circulation in bronchopneumonia?

From the symptomatic standpoint, any treatment is self-condemned that depresses the circulation as a routine in those with low blood pressure and with high blood pressure. While possibly in the latter class of cases depression of the circulation might relieve certain distresses due to the high blood pressure in the pneumonic, just as in the nonpneumonic, depressing the circulation in a patient who is already enfeebled, as might readily occur when the veratrum is started late in the disease, seems little less than criminal.

Regarding the pharmacodynamics of veratrum viride, Horatio C. Wood, Jr., reported in 1906 that the smallest effective dose of veratrum viride produced in dogs and rabbits a slowing of the pulse and a fall of blood pressure which was rather persistent, and that the slowing is due mainly to stimulation of the vagus center. That the fall in blood pressure is not due to direct action on the vasomotor center was shown in 1915 by Pilcher and Sollmann. Toxic doses produced at first an exaggeration of the vagus stimulation as a marked slowing, irregularity, and final arrest with corresponding fall in blood pressure. This is followed by sudden extreme acceleration and rise of blood pressure (partly asphyxial and partly spasmodic). This rise may last for several minutes, and is succeeded by a rapid, progressive fall and death. Other signs of toxicity are profuse sweating, and nausea, followed quickly by vomiting, diarrhea, dysphagia, collapse, paralysis and light convulsions. Collins and Collins and Hanzlik have shown that veratrum album produced marked slowing, together with fall of both systolic and diastolic blood pressure in man. Similar effects have been observed by Hewlett from veratrum viride. Large doses sometimes produced unpleasant gastric and intestinal symptoms, chiefly nausea and vomiting. The effective doses (tincture or fluidextract) are slightly larger for veratrum viride than for veratrum album. This has also been found true for animals.

SAFE INVESTMENTS

To the Editor:—I should like to know whether THE JOURNAL has an advisory investment department. Physicians, as a rule, are poor investors because they do not know whom to go to for advice. I have a $1,000 bond of the New York Central Railroad Company that pays me 7 per cent. Holders of these bonds are taxed in Virginia, both by the commonwealth and by the municipality, in addition to the income (federal) tax. It is my desire to invest this money in some good corporation that would pay at least 7 per cent., naturally with all taxes paid; but I should want the principal safely invested. I have been thinking of buying Crucible Steel, either common at 50 or preferred at 80, which would net me a good interest on my money. I can get 105½ for the bonds. Would you recommend this change as safe, or could you suggest a better investment? One man, a friend, advised me to put it in the Northern Power Company of Minneapolis, which pays 7 per cent. Do you know anything about the company, the management, etc.

M.D., Alexandria, Va.

ANSWER.—It would not be consistent with sound investment to exchange the New York Central Railroad 7 per cent. bond for either the preferred or common stock of the Crucible Steel Company of America—or, for that matter, to exchange it for any stocks. At the present writing Crucible Steel common stock, selling around 57 and paying a dividend at the rate of $4 a year, and the preferred stock, selling around 83 and paying at the rate of $7 a year, might appear attractive; but, as is the case with most stocks, there is no certainty that present dividends will be consistently maintained. Earnings may fluctuate as much in the future as they have in the past, and dividends which may reasonably be expected from such earnings are subject to the same fluctuations. Dividends on these particular stocks have been as follows in recent calendar years:

	Preferred Per Cent.	Common Per Cent.
1907	5½	..
1908	..	..
1909	3¾	..
1910	8¾	..
1911–1913	7	..
1914	3½	..
1915	1¾	..
1916	13	..
1917	25¾	..
1918	7	..
1919	7	4½
1920	7	10

It will be noted that unpaid dividends on the preferred stock were made up in 1916 and 1917, but this was made possible because of enormous war earnings, which are now a thing of the past. The record of this company is similar to that of most other enterprises, even of the most substantial character, and instead of becoming a partner through the purchase of stock it would probably prove far more satisfactory to become a secured creditor of some strong company through the purchase of good bonds.

The New York Central Railroad Company 7 per cent. bond—at this time selling at 106—is a good bond, and possesses a ready market which may recommend it. On the other hand, it is no better than a great many other 7 per cent. bonds which are selling at lower prices because they do not possess quite so good a market. A list of such bonds can be obtained from any first-class bond house or from your banker. Your safest program to follow is to invest only in bonds which the most reliable houses in the business originate and recommend.

In regard to state taxes, you would be in exactly the same position with any other corporation bond as you are with the New York Central bond. Some companies agree to pay the normal federal tax on the income from their bonds up to 2 per cent. (the maximum amount which the government will collect from the source). No part of this tax is paid for you on this bond by the New York Central Railroad, and therefore you can figure that it is costing you $1.40 a year (2 per cent. on $70 coupons) to hold this bond instead of a 7 per cent. bond where such tax is paid. It is, of course, possible for you to exchange this bond for a good 7 per cent. bond on which the tax is paid.

You mention the Northern Power Company of Minneapolis, but we believe you must have in mind the Northern States Power Company. The only 7 per cent. bonds which this company has outstanding mature next year, and therefore an exchange to one of these would not seem especially attractive. It would probably be more desirable at this time to obtain bonds which pay a good income for a long period of time.

You say it is your desire to invest in some good corporation that will pay at least 7 per cent. and, naturally, all taxes paid, but that you would want the principal safely invested. We fear that you will be disappointed in this, since only national, state, county and municipal bonds are tax exempt, and none of these will pay over 5 per cent.; in fact, few can be had at a price that will net even this much. A few months ago it would have been possible to carry out your desire.

Unless one's income tax amounts to a very considerable part of the total income, it would be more profitable to own corporation bonds which are not tax exempt rather than to purchase municipal bonds, the best of which now yield only around 4.5 per cent. There are many very desirable bonds which can be purchased at lower prices than 106 when 2 per cent. of the normal tax is paid.

New Organism of Botulinus Group.—The United States Public Health Service has called attention to a report of Dr. I. A. Bengtson that she has demonstrated an anaerobic organism producing a soluble toxin similar to that produced by the bacillus botulinus but which fails to be neutralized by polyvalent botulinus antitoxin. The organism appears to resemble more closely the European type described by von Ermengem in 1912 than the type usually isolated in the United States. The suggestion has been made that this organism causes limber neck in chickens but proof is not yet available.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, April 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

ARKANSAS: Little Rock, May 2-3. Sec., Reg. Bd., Dr. J. W. Walker, Fayetteville.

ARKANSAS: Little Rock, May 9. Sec., Eclec. Bd., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith. Sec., Homeo. Bd., Dr. Geo. W. Love, Rogers.

COLORADO: Denver, April 4. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, April 11. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.

HAWAII: Honolulu, April 10. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.

IDAHO: Boise, April 4. Director, Mr. Paul Davis, Boise.

ILLINOIS: Chicago, March 27-29. Director, Mr. W. H. H. Miller, Springfield.

IOWA: Des Moines, March 21-23. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

MINNESOTA: Minneapolis, April 4-6. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.

MONTANA: Helena, April 4. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEW MEXICO: Santa Fe, April 10-11. Sec., Dr. R. E. McBride, Las Cruces.

NEVADA: Carson City, May 1. Sec., Dr. Simeon L. Lee, Carson City.

OKLAHOMA: Oklahoma City, April 11-12. Sec., Dr. J. M. Byrum, Shawnee.

PORTO RICO: San Juan, April 4. Sec., Dr. M. Quevedo Baez, Box 804, San Juan.

RHODE ISLAND: Providence, April 6-7. Sec., Dr. Byron U. Richards, State House, Providence.

UTAH: Salt Lake City, April 4. Director, Mr. J. T. Hammond, Salt Lake City.

Texas Reciprocity Report

Dr. T. J. Crowe, secretary, Texas State Board of Medical Examiners, reports that 116 candidates, including 26 osteopaths, received physicians' and surgeons' licenses by reciprocity during 1921. One candidate was licensed by endorsement of credentials, and one candidate was licensed on government credentials. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Birmingham Medical College		(1915)	Alabama
University of Alabama		(1897), (1910)	Alabama
University of Arkansas		(1913)	Kansas
College of Medical Evangelists		(1917)	California
Denver and Gross College of Medicine		(1907)	Colorado
University of Colorado		(1920)	Colorado
Howard University		(1920)	New Jersey
Atlanta School of Medicine		(1908)	Georgia
Chicago College of Medicine and Surgery		(1908)	Iowa
Chicago Homeopathic Medical College		(1894)	Wisconsin
Illinois Medical College		(1907)	Louisiana
Loyola University		(1917)	Illinois
Northwestern University		(1904), (1920, 2)	Illinois
Rush Medical College		(1890)	Ohio
Indiana Medical College		(1906)	Oklahoma
Indiana University		(1920)	Indiana
Medical College of Indiana		(1902)	Indiana
Drake University		(1908)	Iowa
University of Kansas School of Medicine		(1915)	Kansas
Hospital College of Medicine, Louisville		(1903)	Kentucky
Kentucky School of Medicine		(1893)	Oklahoma
University of Louisville Medical Department		(1891) (1896) Missouri, (1907) Mississippi, (1911) Kentucky, (1912) Louisiana, (1916), (1917) Kentucky	Tennessee
Tulane University		(1911), (1914), (1916), (1917), (1920, 4) Louisiana, (1921) Alabama, Louisiana	
Johns Hopkins University		(1913) Maryland, (1917) (1919), (1920) Maryland	Missouri
Harvard University		(1918)	Minnesota
Detroit College of Medicine and Surgery		(1915)	Michigan
Barnes Medical College		(1898), (1904) (1907) Illinois, Kansas, North Dakota	Missouri
College of Phys. and Surgeons, Kansas City, Mo.		(1875)	Missouri
Eclectic Medical University, Kansas City, Mo.		(1914)	Arkansas
Kansas City College of Medicine and Surgery		(1920)	Arkansas
Kansas City Medical College		(1891)	Oklahoma
National University of Arts and Sciences		(1918)	Missouri
St. Louis University School of Medicine		(1906) (1915) Illinois, (1916) California	Missouri
University Medical College of Kansas City		(1904) Oklahoma, (1905) Kansas, (1911) Missouri	Missouri
Washington University		(1902) Illinois, (1910) Kansas,	Missouri
Lincoln Medical College		(1910)	Nebraska
University of Nebraska		(1905)	Nebraska
Long Island College Hospital		(1895) (1905) California, (1914) New York	New York
Medical College of Ohio		(1897)	Ohio
Jefferson Medical College		(1911) (1916) Mississippi, (1920) North Carolina	Penna.
University of Pennsylvania		(1919)	Tennessee
Chattanooga Medical College		(1900)*	Alabama
College of Physicians and Surgeons, Memphis		(1911)	Tennessee
Lincoln Memorial University		(1916)	Tennessee
Meharry Medical College		(1920)	Tennessee
University of Nashville		(1911)	Mississippi
University of Tennessee		(1908)	Tennessee
Vanderbilt University		(1901) Alabama, (1912) (1913), (1916), (1920), (1921) Tennessee	Kentucky
School of Medicine of Nuevo Leon		(1891)*	Arizona
Osteopaths		Arkansas (1), Maryland (1), Michigan (1), Minnesota (1), Missouri (21), Oklahoma (1)	

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
George Washington University		(1910)	U. S. Army
University of Texas		(1916)	N. B. M. Ex.

* Graduation not verified.

Washington January Examination

Mr. William Melville, secretary, Washington Department of Licenses, reports the written examination held at Spokane, Jan. 4-6, 1921. The examination covered 13 subjects and included 130 questions. An average of 75 per cent. was required to pass. Of the 7 candidates examined, 4 passed and 3 failed. Fifty-six candidates were licensed by reciprocity. One candidate was licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Johns Hopkins University		(1919)	1
Dartmouth Medical School		(1903)	1
Medical College of the State of South Carolina		(1919)	1
University of Manitoba		(1915)	1

College	FAILED		
College of Physicians and Surgeons		(1892)	1
Hahnemann Medical College and Hospital of Chicago		(1903)	1
Loyola University		(1918)	1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Leland Stanford University		(1916)	California
University of California		(1907)	California
American Medical Missionary College		(1906)	Illinois
Bennett College of Eclectic Medicine and Surgery		(1897)	N. Dakota
Chicago College of Medicine and Surgery		(1910, 2), (1915)	Illinois
College of Physicians and Surgeons, Chicago		(1904) (1905), (1906) Montana	Illinois
Hahnemann Medical College and Hospital of Chicago		(1894), (1895) Montana, (1906)	Illinois
Loyola University		(1917)	Illinois
Northwestern Univ.		(1907), (1910), (1915), (1918), (1920)	Illinois
Rush Medical College		(1897) Minnesota, (1900) (1912) Nebraska, (1913), (1916) Montana, (1915), (1918), (1920) Illinois	Montana
University of Illinois		(1913) Wisconsin, (1918)	Illinois
Sioux City College of Medicine		(1905)	Iowa
State University of Iowa College of Medicine		(1918)	Iowa
State University of Iowa College of Homeo Med.		(1913)	Iowa
Kansas Medical College, Topeka		(1909)	Montana
Hospital College of Medicine, Louisville		(1906)	Oklahoma
Baltimore Medical College		(1899)	Penna.
University of Maryland		(1902)	Minnesota
Harvard University		(1905)	Minnesota
Detroit College of Medicine and Surgery		(1904) (1911), (1914) Michigan	Montana
University of Michigan Medical School		(1904)	Montana
University of Minnesota Medical School		(1899)	Montana
Central Medical College of St. Joseph		(1898)	Wisconsin
Kansas City Medical College		(1902)	Oklahoma
St. Louis University School of Medicine		(1903) (1908) Montana	Illinois
University Medical College of Kansas City		(1905) (1910) Montana	Kansas
Washington University		(1911)	Wyoming
Dartmouth Medical School		(1911)	Montana
Albany Medical College		(1906)	Montana
Medico-Chirurgical College of Philadelphia		(1898)	Idaho
Vanderbilt University		(1905)	Tennessee
Queens University		(1914)	Iowa
Western University		(1906)	Nebraska
University of Munich		(1912)	Wyoming

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Northwestern University		(1918)	N. B. M. Ex.

Connecticut November Examination

Dr. E. C. M. Hall, secretary, Homeopathic Medical Examining Board, reports that one candidate was examined and passed and one candidate was licensed by reciprocity at the meeting held at New Haven, Nov. 8, 1921. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Hahnemann Medical Coll. and Hosp. of Philadelphia		(1921)	87

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Southwest School of Medicine and Hospital		(1915)	Missouri

Book Notices

Industrial Fatigue and Efficiency. By H. M. Vernon, M.A., M.D., Investigator for the Industrial Fatigue Research Board. Cloth. Price, $5. Pp. 264. New York: E. P. Dutton & Co., 1921.

This is a practical consideration of industrial problems, the information presented relating only to workshop practice and having no basis in laboratory studies. Fatigue has been measured directly in the shop. Curves are presented of the hourly and daily output, the output in relation to weekly hours of work, the output in relation to various industries, and the advantages of six hour days and multiple shifts, of work spells and rest periods. Other chapters deal with lost time and its causation, sickness, industrial accidents and factory conditions. The final chapter is devoted to practical conclusions as to how such studies are to be conducted and as to the way in which principles of industrial efficiency may best be formulated.

Bowel Diseases in the Tropics: Cholera, Dysenteries, Liver Abscess and Sprue. By Sir Leonard Rogers, C.I.E., M.D., F.R.C.P., Extra Physician for Clinical Research and Lecturer in Tropical Medicine, London School of Tropical Medicine. Cloth. Price, $9. Pp. 475, with 8 illustrations. New York: Oxford University Press, 1921.

The chapters on cholera occupy the first 200 pages, those on the dysenteries and liver abscess the following 260, and the chapter on hill diarrhea and sprue the remaining pages. In reality, two earlier books by the same author on cholera and the dysenteries have been combined, after extensive rewriting and revising, into one modern, thorough and comprehensive work. The extensive history of the epidemics of cholera should prove of special interest to epidemiologists, while the parts dealing with the clinical course, diagnosis and treatment of the most important bowel infections of the tropics cannot but prove of great value to all physicians who are at all concerned in these diseases.

La Tuberculose Pulmonaire. Études de Phtisiologie Clinique et Sociale. Par Léon Bernard, Professeur à la Faculté de Médecine de Paris. Paper. Price, 10 francs, net. Pp. 258. Paris: Masson et Cie, 1921.

This is a collection of studies on various phases of pulmonary tuberculosis, such as infection and immunity; chronic forms; elements of prognosis; bronchitis and emphysema in the tuberculous; tracheobronchial adenopathy; artificial pneumothorax; specific medication; social prophylaxis, and compulsory notification. The work takes up subjects usually slurred over by the stereotyped textbook. The author frequently states that the severity of tuberculous infection is in proportion to the size of the dose of bacilli. In this connection, he treats of the tuberculosis of infancy and of later childhood. He holds the opinion that those children who survive the early attacks of tuberculosis will succumb in later life only if subjected to reinfection. He notes that, at necropsy, small children who have died of massive tuberculous infection present extensive gland lesions, while adults present few such glandular changes, but much tissue destruction. He also points out that this extensive lung destruction is not found in the child. Further, he insists, with justice, it would seem, that such calcified lymphatic glands as are found in the adult at necropsy could never have been such large cheesy masses as are found in children after death. He thinks, therefore, that such persons as come to necropsy in adult age have had but small doses of bacilli in infancy, and they have succumbed to repeated massive infection shortly before their adult breakdown; in support of the preceding, Bernard refers to experiments on guinea-pigs. He would abolish the idea of stages or degrees of tuberculosis of the lung, chiefly because of the inability of clinicians to agree as to what constitutes "stages." It is of more importance, he thinks, to determine whether the lesion is active or inactive—truly, a sensible idea. The adoption of such a scheme would throw Turban's and other classifications into the discard. This plan would seem to be of far more use to the general practitioner than the present scheme of mapping out the area involved, particularly as Bernard wisely points out that one cannot determine the severity of the disease from the extent of the lesion. Interesting chapters are those on caseous pneumonia, emphysema and the elements of prognosis. Too much space is spent on the cutaneous reaction and on specific medication, although, as regards the latter, the author succeeds in relegating the flood of tuberculins to the limbo of inefficacy. Bernard has had no unpleasant experiences with artificial pneumothorax, and voices no warning as to untoward happenings, which might lead one to question the breadth of his experience. He attributes the improvement following lung collapse to the immobilization of the lung, rather than to the inhibition of the lymphatic flow. More than seventy-five pages are devoted to dispensary establishment and management, sanatoriums and hospitals, to a recital of public prophylactic measures, and to an appeal to the medical public to support compulsory notification. We gather, when we read that the chief campaign against tuberculosis began as a war measure to succor returned tuberculous soldiers, that the fight against tuberculosis is not very far along in France. One cannot read Bernard without acknowledging his soundness as a clinician and as a student of the public health, and yet one has the feeling of narrowness. One might imagine, when one notes the paucity of reference to work and authors other than French, that France had been cut off from the rest of the world. This is a fault common with European writers, for which allowance must be made.

Domiciliary Treatment of Tuberculosis. By F. Rufenacht Walters, M.D., B.S., M.R.C.P., Joint Tuberculosis Officer for Surrey. Cloth. Price, $4. Pp. 290. New York: William Wood & Co., 1921.

Dr. Walters' handbook for practitioners is based on his experience as a tuberculosis officer and as the attending physician in a sanatorium. It follows the general plan of most handbooks in its discussion of rest, ventilation, open air, and the prevention of infection. Dr. Walters is apparently a therapeutic optimist. He continues to believe in the valuable effects of tuberculin, and in a large majority of drug preparations and serums, both of known and unknown composition, which have been used from time to time in the treatment of this disease. These beliefs have long since passed from the best American views as to what is proper in the therapy of tuberculosis.

How to Live. Rules for Healthful Living Based on Modern Science. By Irving Fisher, Professor of Political Economy, Yale University, and Eugene Lyman Fisk, M.D., Medical Director of the Life Extension Institute, Inc. Authorized by and Prepared in Collaboration with the Hygiene Reference Board of the Life Extension Institute, Inc. Fifteenth edition. Cloth. Price, $1.50. Pp. 461, with illustrations. New York: Funk & Wagnalls Company, 1921.

The fourteenth edition of this book was published in 1918. The fifteenth edition, which was first published in 1919, is now passing through the fifth printing. It is devoted to the teaching of individual hygiene under the general headings of air, food, poisons, activity and hygiene, with supplemental notes on such matters as posture, alcohol, tobacco and eugenics. It is a safe and sane presentation of the subject.

The Prevention of Malaria in the Federated Malay States. A Record of Twenty Years' Progress. By Malcolm Watson, M.D., C.M., D.P.H., Chief Medical Officer, Estate Hospital's Association, Klang, F. M. S. With contributions by P. S. Hunter, M.A., M.B., D.P.H. Deputy Health Officer, Singapore, and A. R. Wellington, M.R.C.S., L.R.C.P., D.P.H., Senior Health Officer, Federated Malay States. Preface by Sir Ronald Ross, K.C.B., K.C.M.G., F.R.C.S. Second edition. Cloth. Price, $12 net. Pp. 381, with 115 illustrations. New York: E. P. Dutton & Company, 1921.

This is a valuable description of antimalarial measures by drainage and otherwise which will be of special interest to others engaged in practical campaigns against malaria.

The Allen (Starvation) Treatment of Diabetes with a Series of Graduated Diets. By Lewis Webb Hill, M.D., Junior Assistant Visiting Physician, Children's Hospital, Boston, and Rena S. Eckman. With an Introduction by Richard C. Cabot, M.D. Fourth edition. Cloth. Price, $1.75. Pp. 140. Boston: W. M. Leonard, 1921.

This booklet makes available to patients the necessary facts regarding diet in the treatment of diabetes. It includes a graduated series of forty-eight dietary tables providing from 47 to 2,062 calories. In addition, there are thirty pages of recipes and ten pages devoted to food values and diabetic foods.

Medicolegal

Patient's Ignorance No Excuse for Refusal to Follow Advice or Obtain Roentgenogram

(Carey v. Mercer (Mass.), 132 N. E. R. 353)

The Supreme Judicial Court of Massachusetts, in sustaining exceptions to a judgment recovered by the plaintiff, says that the plaintiff's evidence tended to show that the defendant physician was negligent in failing to have a roentgenogram taken of the plaintiff's leg, which would have disclosed a fracture at the knee joint. On the other hand, there was evidence that the defendant advised the plaintiff to have the roentgenogram taken, but that the plaintiff declined because of the expense involved. Furthermore, the defendant requested a ruling that, if the jury found that the roentgenogram was required to determine whether any bone of the plaintiff's leg was broken and that he had been so informed by the defendant and declined to have a roentgenogram taken, then the defendant was not responsible for not discovering the broken bone. That instruction should have been given.

The jury were instructed to the following effect:

"When a manual examination or an ordinary examination is made by a physician called to a case in which a suspicion of fracture may be present, it may be possible to determine the fracture without it; and if the examination discloses no fracture but there are symptoms present which to the ordinary and average physician would, in your opinion, require the further verification by a roentgen-ray machine, and the physician fails to have a roentgenogram taken or at least to urge it on his patient, he would be negligent. Now you observe perhaps in that last statement a qualification. Ordinarily those of us who become ill or injured are quite willing to place ourselves entirely at the disposition of the physician we call and follow his advice carefully. Others possibly at times decline the physician's advice. It is no part the duty of a physician who has advised what, in his opinion, and what would, in your opinion, according to the standard of ordinary skill in the community, be necessary for the proper treatment of the case, to insist on it against objection on the part of the patient; but you would have to find that the patient fully understood and was informed of the reasonableness of the requirement and refused to follow the physician's advice, with a full knowledge of the consequences he was bringing on himself, in order to justify the failure of a physician to take a roentgenogram, or to treat the patient in any other manner, solely because the patient refused to submit to the treatment or to follow the physician's advice."

There was error in that part of the instruction, "You would have to find that the patient fully understood and was informed of the reasonableness of the requirement and refused to follow the physician's advice, with a full knowledge of the consequences he was bringing on himself." That was not a correct statement of the law. If the roentgenogram was not taken because of the plaintiff's refusal, the defendant could not be charged with negligence in that respect. He was responsible to the plaintiff for failure to use the care and skill of an ordinary practitioner in the community where he practiced his profession. If a roentgenogram was essential in order to discover the fracture, and the physician, in the exercise of that degree of care required of him, advised that it be taken and the patient refused that advice, the physician could not be charged with negligence. The plaintiff could not hold the defendant responsible for the consequences of his own want of care, nor attribute to him damages resulting from his own neglect; and he could not complain if injury resulted from his refusal to follow the advice of the attending physician. A patient, when he places himself in the care of a physician, cannot decline to follow his advice nor adopt his suggestions because the patient does not possess full knowledge of the dangers involved in his own neglect, or in his failure to do what the physician recommends. The patient cannot charge the physician with negligence if the patient himself refuses to carry out the directions because ignorant of the consequences which might result from such failure. The patient may fail to understand fully the necessity of doing what the physician recommends, but he cannot attribute to the physician the damages which resulted from his own failure to have something done, when this was caused by his own conduct, even if he was ignorant of the consequences which would result from his refusal. If the rule were as quoted, it would place an unreasonable burden on the physician.

"Napropathy" Described and Practice of It Held to Be Illegal

(Carpenter v. State (Neb.), 184 N. W. R. 941)

The Supreme Court of Nebraska, in affirming a judgment of conviction of defendant Carpenter of the illegal practice of medicine for a stated fee, holds that the statute of that state regulating the practice of medicine is not void as discriminatory because it fails to provide that persons desiring to practice "napropathy" may treat diseases without examination. The court says that the defendant was allowed to testify that napropathy is a drugless method of treatment of diseases or disorders of the human body discovered or founded about fifteen years ago, and that he did not treat cases of obstetrics or of broken bones. He thus stated the theory of treatment:

> We believe that the innate property of ligamentous tissue to shrink up from injury results very frequently in damage to the nerves which go through the spinal column to the different parts of the body, and thus the impairment to nerves due to this contracting property of the ligamentous tissue results in shutting off the nerves in there, or possibly irritation of the nerves, so that the organs or parts thus supplied do not act in a normally functioning way.

The defendant further testified that he treated the ligaments by using manual force on the bones to which the ligaments were attached, using the prominences of the bones as a lever to stretch the shrunken ligaments, which are for the most part attached to the vertebrae. Another witness, when asked to state the difference between chiropractic and osteopathy, on the one hand, and napropathy, on the other, testified:

> As far as I can see, they are opposite in this regard: The chiropractor works on the basis of bones out of place, works on the basis of putting them back in place, makes up his treatment as he goes along; in other words, without chart or bookkeeping. The napropath says we should do all work with a chart, work on the basis it's a ligatight, not bone out of place; a ligatight is a shrunken ligament, and on the basis we should stretch those shrunken ligaments. Without any accusations against the chiropractor, the chiropractor is the same as the osteopath, as far as I can see in theory and action.

There was no error in a refusal to instruct the jury to the effect that the law permits any person to treat diseases or physical ailments of others through the administration of household remedies, and that by such administration is meant the use of any agency, "such as massage or the exercise of the muscles or nerves by external physical manipulation, when such use of either or any of such agencies is frequently applied by members of a family or household in which one may be suffering some physical or mental ailment, or by neighbors, or by any other person called in for advice for such ailments." Use in Bohemia or in the families of immigrants from Europe of rubbing or manipulation of the spine would not establish that the practice of napropathy as described is an "ordinary household remedy" in this country.

There are but few relations in life in which there is a greater feeling of dependence, trust and confidence than in the relation between a patient and his physician. The very use of the title "Doctor" to the average mind implies peculiar skill and knowledge, and invites faith and confidence, and it is entirely proper to protect the public from ignorant or incompetent men or women professing to be competent physicians. Such laws, no doubt, in some cases prevent a man of greater ability, or better education, than some of those having the legal qualifications, from practicing, and seem unjust in isolated cases; but it is impossible to legislate to meet every individual case, and some latitude must be allowed in order to attain the necessary and proper object to be attained —the protection of the public from quacks. The legislature cannot be expected to anticipate the founding of new systems of thought or methods of healing, and neither can the state board of health be required to anticipate every new idea in the drugless treatment of diseases. Unless so provided by

the legislature, it is not incumbent on the state board of health to furnish means for examining the qualifications of all persons desiring to treat patients by drugless or other methods of healing for fee or reward, and to fail to do so is not a denial of any constitutional right.

Sunstroke a Bodily Injury Through Accidental Means

(Richards v. Standard Acc. Ins. Co. (Utah), 200 Pac. R. 1017)

The Supreme Court of Utah affirms a judgment for $15,000 in favor of the beneficiary of an accident insurance policy in a case in which the insured died as the result of a sunstroke on the desert in Arizona. The insurance was against "loss resulting from bodily injuries effected . . . through accidental means." Physicians who testified for the defendant declared sunstroke to be a disease, and some of them said that all medical authorities pronounce it a disease, usually called "thermic fever," a synonym for sunstroke. Furthermore, the court says that the medical books describe sunstroke as a disease and every standard encyclopedia does the same. Besides, a formidable array of authorities hold sunstroke to be a disease and therefore not embraced within the words "bodily injury." Nevertheless, it is not deniable that when considered in its popular sense sunstroke is a bodily injury and an accident. So, applying the rule that the parties to a contract of insurance are conclusively presumed to have intended the term as it is ordinarily understood by the average man, it is clearly manifest that sunstroke was covered by the words "bodily injuries through accidental means."

Damages for Malpractice—Cross-Examining of Experts

(Bonderson v. Hovde et al. (Minn.), 184 N. W. R. 853)

The Supreme Court of Minnesota, in affirming an order denying the defendants a new trial after the plaintiff had received a verdict for $5,000 damages for alleged malpractice in the treatment of his daughter, 14 years of age, says that the girl sustained a fracture of the left arm near the wrist. She was taken to the defendants, who reduced the fracture and put the arm in splints. She went to them for treatment from time to time during a period of about three weeks. Then it developed that there were sores under the bandages and that a septic condition had set in. There was dead tissue and part of the bone was dead. Thereupon, she received treatment from other physicians and surgeons. As a result of the diseased condition that developed, the hand and a part of the arm became deformed and there was a permanent loss of much of the use of them. This action was brought to recover damages on the theory of malpractice. The evidence was in conflict. The plaintiff contended that the bandages placed on the arm were wrapped too tightly, that the girl complained of this from time to time, and that the defendants told her it was all right. There was expert medical testimony to the effect that the tight wrapping of the bandages was a cause of the diseased condition of the arm. The court regards the evidence as sufficient to sustain the jury's finding that the patient suffered injury through negligent treatment on the part of the defendants, although there were some inconsistencies in the testimony of the witnesses for the plaintiff and the evidence was far from conclusive.

The defendants contended that the damages awarded were excessive, and in this connection argued that there was no proof that the loss of the portion of bone was due to the tight bandages. But the court need not stop to consider whether or not the evidence contained sufficient proof on this point, for, aside from the loss of the bone, the condition of the arm was such that, if liability existed at all, a verdict for $5,000 was not excessive.

The plaintiff called medical experts to give opinion evidence as to the cause of the diseased condition of the arm, based on assumption of facts as shown by the testimony on behalf of the plaintiff. On cross-examination, the defendant's counsel sought to elicit an opinion from these witnesses based on an assumption of facts as claimed by the defendants. The facts assumed were not then in evidence. The trial court rejected this testimony. This was assigned as error. The supreme court thinks there was no reversible error. The supreme court fully agrees with counsel for the defendant that wide latitude should be allowed on cross-examination of medical experts, and says it is altogether probable that if the court had permitted the cross-examination there would have been no reversible error. Counsel may even be permitted on cross-examination, for the purpose of testing the skill and accuracy of the expert witnesses, to ask hypothetical questions pertinent to the inquiry, assuming facts having no foundation in the evidence. But the range of such cross-examination must rest largely in the discretion of the trial court, and the supreme court thinks there was no abuse of discretion in this case.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Birmingham, April 20-23. Dr. H. G. Perry, Montgomery, Secretary.
American Association of Genito-Urinary Surgeons, Washington, D. C., May 2-3. Dr. R. F. O'Neil, 374 Marlborough St., Boston, Secretary.
American Ass'n of Pathologists and Bacteriologists, Washington, D. C., May 2-4. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.
American Association of Physicians, Washington, D. C., May 2-4. Dr. Thomas McCrae, 1627 Spruce St., Philadelphia, Secretary.
American Bronchoscopic Society, Washington, D. C., May 3. Dr. Samuel Iglauer, 701 Race St., Cincinnati, Secretary.
American Climatological and Clinical Association, Washington, D. C., May 2-4. Dr. Arthur K. Stone, Framingham Center, Mass., Secretary.
American Congress on Internal Med., Rochester and Minneapolis, April 3-8. Dr. Frank Smithies, 1002 N. Dearborn St., Chicago, Secretary.
American Dermatological Association, Washington, D. C., May 2-4. Dr. Udo J. Wile, University of Michigan, Ann Arbor, Secretary.
American Gastro-Enterological Association, Washington, D. C., May 1-2. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
American Gynecological Society, Washington, D. C., May 1-3. Dr. A. H. Curtis 104 S. Michigan Ave., Chicago, Secretary.
American Laryngological Association, Washington, D. C., May 1-3. Dr. George M. Coates, 1811 Spruce St., Philadelphia, Secretary.
American Laryng., Rhinol. and Otological Society, Washington, D. C., May 4-6. Dr. W. H. Haskin, 40 E. 41st St., New York, Secretary.
American Neurological Association, Washington, May 2-3. Dr. Frederick Tilney, 22 E. 63d St., New York, Secretary.
American Ophthalmological Society, Washington, D. C., May 1-3. Dr. T. B. Holloway, 1819 Chestnut St., Philadelphia, Secretary.
American Orthopedic Association, Washington, D. C., May 2-4. Dr. De Forrest P. Willard, 1630 Spruce St., Philadelphia, Secretary.
American Otological Society, Washington, D. C., May 2-3. Dr. Thomas J. Harris, 104 E. 40th St., New York, Secretary.
American Pediatric Society, Washington, D. C., May 1-3. Dr. H. C. Carpenter, 1805 Spruce St., Philadelphia, Secretary.
American Psychopathological Association, Washington, D. C., May 1. Dr. Sanger Brown, 2d, 118 E. 80th St., New York, Secretary.
American Society of Tropical Med., Washington, D. C., May 2. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Secretary.
American Surgical Association, Washington, D. C., May 2-4. Dr. John H. Gibbon, 1608 Spruce St., Philadelphia, Secretary.
American Therapeutic Society, Washington, D. C., May 1-2. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
California, Medical Society of the State of, Yosemite, May 9-12. Dr. W. E. Musgrave, Butler Bldg., San Francisco, Secretary.
Congress of Amer. Phys. & Surgs. of North America, Washington, D. C., May 2-3. Dr. W. R. Steiner, 646 Asylum Ave., Hartford, Conn., Sec.
Georgia, Medical Association of, Columbus, May 3-5. Dr. Allen H. Bunce, Healy Building, Atlanta, Secretary.
Iowa State Medical Society, Des Moines, May 10-12. Dr. T. B. Throckmorton, Bankers' Trust Bldg., Des Moines, Secretary.
Kansas Medical Society, Topeka, May 3-4. Dr. J. F. Hassig, 800 Minnesota Ave., Kansas City, Secretary.
Louisiana State Medical Society, Alexandria, April 11-13. Dr. P. T. Talbot, 1551 Canal St., New Orleans, Secretary.
Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-27. J. A. Chatard, 1211 Cathedral St., Baltimore, Secretary.
Mississippi State Medical Association, Hazlehurst, May 9-10. Dr. T. M. Dye, Clarksdale, Secretary.
Missouri State Medical Association, Excelsior Springs, May 9-11. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
National Tuberculosis Association, Washington, D. C., May 4-6. Dr. George M. Kober, 370 Seventh Ave., New York, Secretary.
Nebraska State Medical Association, Omaha, April 24-27. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
New Mexico Medical Society, Gallup, April 28-29. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Acting Secretary.
New York, Medical Society of the State of, Albany, April 18. Dr. E. L. Hunt, 17 W. 43d St., New York, Secretary.
North Carolina, Medical Society of the State of, Winston-Salem, April 25-27. Dr. L. B. McBrayer, Sanatorium, Secretary.
Ohio State Medical Association, Cincinnati, May 2-4. Mr. Don K. Martin, 131 East State St., Columbus, Executive Secretary.
Oklahoma State Medical Association, Oklahoma City, May 9-11. Dr. C. A. Thompson, 508 Barnes Bldg., Muskogee, Secretary.
South Carolina Medical Association, Rock Hill, April 18-19. Dr. Edgar A. Hines, Seneca, Secretary.
Tennessee State Medical Association, Memphis, April 11-13. Dr. Olin West, 327 Seventh Avenue, N., Nashville, Secretary.
Texas, State Medical Association of, El Paso, May 9-11. Dr. H. Taylor, Texas State Bank Bldg., Fort Worth, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Gynecology, St. Louis

February, 1922, **3**, No. 2

*Use of Radium in Cancer of Female Generative Organs. H. Bailey and E. Quimby, New York.—p. 117.
*Action of Commoner Ecbolics in First Stage of Labor. M. P. Rucker, Richmond, Va.—p. 134.
Ten Years of Painless Childbirth. G. C. Mosher, Kansas City, Mo.—p. 142.
*Analysis of Potter Version. E. Speidel, Louisville.—p. 150.
Treatment of Eclampsia; Then and Now. J. F. Moran, Washington, D. C.—p. 155.
*Origin of Bleeding in Ectopic Pregnancy. J. O. Polak and T. S. Welton, Brooklyn, N. Y.—p. 164.
*Pituitary Extract at Beginning of Third Stage of Labor. Its Use in 100 Cases. G. L. Brodhead and E. G. Langrock, New York.—p. 170.
*Three Cases of Rare Ovarian Anomaly. J. C. Janney, Boston.—p. 173.

Radium in Cancer of Female Generative Organs.—Bailey and Quimby are enthusiasts over their results from the use of radium in the treatment of cancer of the female generative organs, which they assert cannot be duplicated without the use of massive doses of radium or without thoroughly radiating the parametrium.

Action of Ecbolics in First Stage of Labor.—Rucker's observations would seem to show that hyoscin has a moderate, but rather constant, ecbolic action in the first stage of labor. The action of quinin is more variable; sometimes it markedly strengthens the normal rhythmic contractions and sometimes it shows no action whatever. The possibility of an inert preparation of ergotol and the fluid extract of ergot is a real one. In the three cases in which a pituitary extract was used, even in minute doses, there was a continued contraction of the uterus that varied from none to thirty-five minutes in duration. Rucker suggests that this is probably the explanation of the many disasters that have followed its use.

Potter Version.—Speidel has found the Potter version of special service in cases with apparently normal diameters but a lack of progress in labor in spite of good pains. In such instances there is generally found premature ossification and, in consequence, nonmolding of the fetal head or an overdeveloped fetal head.

Origin of Bleeding in Ectopic Pregnancy.—Studies made by Polak and Welton have shown that a decidual reaction may be found at several points in the tube in ectopic points often far remote from the seat of implantation. Coincident with the separation or death of the ovum by hemorrhage into the decidua, there is bleeding from the uterus and also bleeding from the several points of decidual reaction in the tube. Tubal peristalsis and the vis a tergo of the clot in the tube, expels blood from the abdominal ostium into the peritoneum, which gravitates into the culdesac. The same factors contribute a portion of the blood, making up the bloody discharge from the uterus, which signifies the separation or death of the embryo.

Pituitary Extract at Beginning of Third Stage of Labor.—It is stated that the only drawback to the method used by Brodhead and Langrock is the possible existence of irregular or hour-glass contraction of the uterus; however, this complication occurs independently of the use of pituitary extract and further investigation will be necessary to show whether this complication is directly attributable to the method or not.

Ovarian Anomaly: Uterine Tissue in Ovary.—The three cases reported by Janney showed the occurrence of uterine tissue in the ovary. They occurred in a total of 4,853 pathologic specimens examined. They were all discovered incidentally, the operations having been performed for other conditions which had not directed attention primarily to the ovaries.

American Journal of Ophthalmology, Chicago

February, 1922, **5**, No. 2

Method of Preventing Loss of Vitreous. F. Frisch, Atlantic City, N. J.—p. 81.
Professor Barraquer of Barcelona and His Method of Phakoeresis. J. O. McReynolds, Dallas, Texas.—p. 83.
Vacuum Extraction of Cataracts. C. E. McDannald, New York.—p. 90.
Vacuum Method of Intracapsular Cataract Extraction. A. S. Green and L. D. Green, San Francisco.—p. 92.
Results of Cataract Operations Performed by Colonel Henry Smith at Wills Hospital, Philadelphia. W. Zentmayer, Philadelphia.—p. 97.
Snowball Vitreous Opacities: Additional Cases. T. B. Holloway, Philadelphia.—p. 100.
Visual Pathway and Paranasal Sinuses. J. P. Schaeffer, Philadelphia.—p. 105.
Hypercholesterinemia and Albuminuric Retinitis. P. Gaudissart, Brussels, Belgium.—p. 118.
Variolous Inflammation of Cornea. G. H. Burnham, Toronto, Can.—p. 123.
Symmetric Cystic Enlargement of Lacrimal Glands Due to Syphilis. H. W. Cowper, Buffalo, N. Y.—p. 125.
Physiologic Hyaloid Artery Remnants. R. Von Der Heydt, Chicago.—p. 125.
Determining Muscle Power. O. Wipper, Chicago.—p. 127.
Subjective Ocular Experiences. E. J. Brown, Minneapolis.—p. 128.

American Journal of Syphilis, St. Louis

January, 1922, **6**, No. 1

*Influence on Toxicity and Trypanocidal Activity of Shaking Acid and Alkalized Solutions of Arsphenamin and Solutions of Neo-arsphenamin in Air. J. F. Schamberg, J. A. Kolmer and G. W. Raiziss, Philadelphia.—p. 1.
Practical Observations on Syphilis. H. H. Hazen, Washington, D. C.—p. 16.
*Enlargement of Lower Lip from Syphilis. D. W. Montgomery and G. D. Culver, San Francisco.—p. 55.
Roentgenology of Syphilis of Bone. E. H. Skinner, Kansas City, Mo.—p. 58.
Standardization of Wassermann Reaction. XXIII. Methods for Conducting Quantitative Complement Fixation Tests and of Reading Scales for Recording Reactions. J. A. Kolmer, Philadelphia.—p. 64.
Id. XXV. Superior Antigen and Complement Fixation Tests in Syphilis (Cholesterolized and Lecithinized Alcoholic Extract of Heart Muscle). J. A. Kolmer, Philadelphia.—p. 74.
Id. XXX. New Complement Fixation Test for Syphilis Based on Results of Studies in Standardization of Technic. J. A. Kolmer, Philadelphia.—p. 82.
Silver Arsphenamin, Qualitative and Quantitative Studies. C. N. Myers, New York City.—p. 111.
Syphilitic Generalized Alopecia; Report of Case. U. G. Arnett, Point Pleasant, W. Va.—p. 131.

Effect of Shaking on Arsphenamin.—Although the toxicity of alkalized and acid solutions of arsphenamin and neoarsphenamin is increased by shaking, Schamberg et al. assert that there is no increase in trypanocidal effect.

Syphilitic Infiltration of Lip.—Besides the typical syphilitic papule or small or large gumma, Montgomery and Culver state, there occasionally arises, in certain regions, a diffuse syphilitic infiltration. The lower lip is especially subject to this and the deformity produced is so striking as to constitute a valuable diagnostic feature. These perivascular infiltrations are very resistent to treatment.

American Journal of Tropical Medicine, Baltimore

January, 1922, **2**, No. 1

Public Health Problems of Southern Countries. N. T. McLean, U. S. Navy.—p. 25.
Review of Reorganization of Sanitary and Public Health Work in Dominican Republic Under United States Military Government of Santo Domingo. R. Hayden, U. S. Navy.—p. 41.
*Medical Department in Virgin Islands. O. J. Mink, U. S. Navy.—p. 59.
American Journal of Tropical Medicine. H. J. Nichols, U. S. Army.—p. 63.
Section of Tropical Medicine, Army Medical Museum, Washington, D. C. G. R. Callender, U. S. Army.—p. 67.
*Treatment of Trichomonas Intestinalis Infections. M. D. Levy, Galveston, Texas.—p. 71.
Incidence of a Leptospira in Kidneys and of Parasites in Intestines of One Hundred Wild Rats Examined in England. A. C. Stevenson.—p. 77.

Health Activities in Virgin Islands.—Mink states that the medical administration of the Virgin Islands since the change of sovereignty has achieved many important results, among which the most important are: (1) marked reduction of infant and general mortality rate; (2) general administration of typhoid prophylaxis and the disappearance of typhoid as a mortality and morbidity factor; (3) the disappearance of pellagra; (4) improvement in general sanitation, especially

in connection with night soil collection and mosquitoes; (5) preservation of accurate mortality, morbidity and birth statistics; (6) relief of the deformities resulting from filariasis, and (7) improvement of conditions in the production and distribution of food products.

Treatment of Trichomonas Intestinalis Infections.—Levy outlines a plan of treatment of these infections which it is believed counteracts the hypochlorhydria and the acholic condition of the intestinal contents by producing in the intestine an excessive concentration of bile, a medium which is inimical to the growth and reproduction of *Trichomonas*. The usual preliminary saline purge and liquid diet having been given, calomel, one-tenth grain, is ordered every twenty minutes until ten doses have been taken, this to be repeated daily for four days each week for four weeks. Dried ox gall, from 5 to 25 grains, in capsules, is given three times daily after meals in addition to dilute hydrochloric acid, from 20 to 40 minims. The hydrochloric acid and ox gall are given daily during the entire month. If an examination of the stool following a saline purge at the end of this time shows trichomonads present, the treatment is repeated. It is the practice to repeat the treatment at least once. This treatment is not proposed as being the treatment par excellence; however, of the patients treated, three have remained free of flagellates for four months, a length of time sufficient to justify the conclusion that these patients were cured as a result of the measures employed.

American Review of Tuberculosis, Baltimore

February, 1922, **5**, No. 12

Terminal Edema in Pulmonary Tuberculosis.—Duboff and Markel assert that about 10 per cent. of deaths from tuberculosis in their institution have been associated with a terminal edema. In addition, they have studied six cases still in the institution, but which, for prognostic reasons, may be considered as terminal edemas, thus bringing the total of cases to twenty-five. Of the total number, four may be classed as cardiacs and nine as nephritics, while the remaining twelve belong distinctly to the agonal group. The cardiac group is a small group in which the edema may simulate the rapid anasarca of acute nephritis, or appear slowly with an accumulation in the ankles gradually extending up the body. The nephritic group occurs most commonly in chronic fibroid cases of long standing with apparently latent pulmonary lesions. The characteristic renal change is focal sclerosis. The gradual failure of the kidney to eliminate is the probable explanation of an edema simulating the cardiac type. The agonal group of edemas is probably caused by predissolution metabolic changes in the tissues themselves, resulting in the conversion of hydrophobic into hydrophilic colloids. The kidneys show secondary changes in function.

Prevention of Tuberculosis.—Krause speaks of children who have minor eye infections usually phlyctenular conjunctivitis. Sometimes they antedate the appearance of tuberculous lymphadenitis or pulmonary disease, while at other times they occur during the course of these; but in many cases may exist alone, and this experience leads him more and more to believe that an underlying tuberculosis is the etiologic factor, an opinion which is gaining wider currency. Such patients should be treated for their tuberculosis and not merely locally for their eyes. Taken in time and put under a modified tuberculosis regimen, they respond well and escape frequently the clinical evidence of more advanced infection. These cases are frequent among children, and their recognition and handling as cases of tuberculosis constitute prophylactic work of the first order. There are, besides, other children who may exhibit their infection, for a time at least, only by skin eruptions. Those who are taken in hand and treated for tuberculosis, and not allowed to go their way after the application of ointments and powders will in many cases fall out of the ranks of future consumptives.

Annals of Otology, Rhinology and Laryngology, St. Louis

December, 1921, **30**, No. 4

Boston Medical and Surgical Journal

Feb. 23, 1922, **186**, No. 8

Typhus at Boston City Hospital.—Examination of the records of the Boston City Hospital for the past ten years, showed that during that period of time four cases have been diagnosed as typhus fever. In five cases diagnosed otherwise a diagnosis of typhus would probably have been justified. The signs were highly suggestive of typhus. Numerous cases, probably not typhus, had eruptions suggestive of typhus. It seems probable that a few cases of typhus fever escaped dectection. The records indicate that the possibility of typhus was not considered in these cases. Shattuck asserts that the diagnosis of typhus is easy in typical cases, but it is important to realize that typhus may simulate a number of other common diseases, and that they in their turn may produce eruptions very suggestive of, or even similar to that of typhus. The diagnosis of typhus in children is more difficult, as a rule, than in adults, because typhus in children generally runs a very mild course. The diagnosis of typhus in atypical cases may be difficult or impossible by the use of known clinical methods, even when supplemented by the ordinary diagnostic procedures of the laboratory. Two of the newer methods of diagnosis are especially valuable. These are: (*a*) the proteus reaction of Wilson, Weil and Felix, and (*b*) microscopic examination of bits of skin excised during life.

Surgical Treatment of Toxic Goiter.—From July 1, 1920, to July 1, 1921, 1,954 patients with goiter were operated on in the Mayo Clinic. One hundred and one had ligations only. Eighteen hundred and fifty-three patients had partial thyroidectomies, in 465 of whom the thyroidectomy was preceded by one or more ligations. Thirty-five patients died, a mortality of 1.78 per cent. Eight of the 996 patients with simple goiter, unassociated with hyperthyroidism, died, a

mortality of 0.8 per cent. Four of the 281 patients with hyperfunctioning adenomatous goiter died, a mortality of 1.4 per cent. Twenty-three of 677 patients with exophthalmic goiter, on whom 1,224 operations were performed (ligations and thyroidectomies), died, a mortality of 1.87 per cent., by operations, and 3.39 per cent. by patients. Fourteen of the patients (2.39 per cent.) were of the 585 who had a thyroidectomy, and nine (1.4 per cent.) were of the 639 who had ligations. Five (22 per cent.) of the patients who died had recurrent goiter; they represent 8.9 per cent. of the fifty-six patients in whom the disease recurred. The deaths were due to three main causes: (1) accidental causes, three patients; (2) intense hyperthyroidism, seven patients; and (3) moderate hyperthyroidism, plus pulmonary complications due to the patient's lowered resistance incident to the long continued progress of the disease or to some intercurrent cause, such as hemorrhage or infection, twelve patients. In one patient the operation failed to check the progress of the disease. Pemberton asserts that the deaths due to severe hyperthyroidism are preventable to a large extent; either an error is made in selecting the patient for operation or in selecting the operation for the patient. If patients who are recognized as poor surgical risks are accepted for operation, a higher mortality rate must be looked on as unavoidable.

Canadian Medical Association Journal, Montreal

February, 1922, **12**, No. 2

Georgia Medical Association Journal, Atlanta

February, 1922, **11**, No. 2

Asthma Due to Sensitiveness to Dog's Hair.—Davison cites the case of a man, aged 41, who had had asthma for twenty-two years. For several years attacks occurred in the spring and fall only and lasted from seven to fourteen days. These attacks gradually increased in severity and frequency till wheezing was present practically the entire year and the acute attacks occurred during all seasons. Cutaneous tests were made with protein extracts from all the different foods the patient ate throughout the entire year and all were negative. The extract from dog hair gave a strongly positive reaction. Further questioning of the patient brought out the fact that the attacks of asthma occurring in the spring and fall had usually been after hunting trips and that his dog now slept on the steps of his sleeping porch just by the patient's bed. The dog was sent away and attacks ceased at once. To give this diagnosis a rational test, a lapse of two weeks was allowed. At the end of two weeks, a neighbor's dog was borrowed and the patient played with it for five minutes. Fifteen minutes later a severe attack of asthma began.

Journal of Biological Chemistry, Baltimore

February, 1922, **50**, No. 2

Bicarbonate Level of Blood in Pneumonia.—Carbon dioxid diagrams of the blood of ten new cases of pneumonia are presented by Barach, Means and Woodwell. In three cases observations were secured before and after the crisis, in one case before and after oxygen therapy, and in two cases before and after the administration of sodium bicarbonate. The alkali of the blood in pneumonia as shown by the level of the carbon dioxid dissociation curve was found to be sometimes within normal limits, sometimes below normal limits. It is suggested that in pneumonia patients showing acidosis either in the sense of a low level of available blood alkali or of decrease in p_H or combination of the two, the administration of sodium bicarbonate may be helpful by diminishing the work of the respiratory bellows. By such a procedure a p_H less alkaline than normal may be brought to normal with no increase in ventilation because of a raising in the level of the dissociation curve. Or, in a case with low curve but normal p_H to start with, the raising of the curve may diminish the amount of ventilation necessary. The use of sodium bicarbonate should be carefully controlled, however, to avoid the production of alkalosis, and when anoxemia is present it should be combined with oxygen therapy.

Rapid Determination of Calcium in Urine.—Shohl and Pedley assert that calcium in the urine can be determined accurately if the urine is oxidized with ammonium persulphate. The calcium is precipitated as the oxalate at p_H 4.8 to 5.2, and titrated with five hundredth normal potassium permanganate. The method requires less than one quarter the time necessary for gravimetric determinations.

Journal of Urology, Baltimore

February, 1922, **7**, No. 2

Operative Treatment and Pathology of Acute Epididymitis. J. H. Cunningham and W. H. Cook.—p. 139.
Suction Drainage: Presentation of Apparatus. M. F. Campbell, New York.—p. 153.
Acknowledgment of Priority for Treatment of Impacted Calculi in Lower End of Ureter Released by Fulguration. H. H. Young, Baltimore.—p. 161.

Gonococcal Infection of Kidney with Rupture.—The case reported by Simmons is unique in combining the infrequent condition of kidney fracture with that very rare condition of pure gonococcal kidney infection. The case is further of interest from a standpoint of diagnosis. The man entered the hospital complaining of violent pain in the abdomen, chiefly in the right side. He had had gonorrhea four months previously. The day prior to admission to hospital he was struck in the abdomen with a large lump of coal. He fell down and at once felt a severe pain in the upper right quadrant of the abdomen. This pain moderated after a "few minutes" and the patient continued to work. The pain started again and soon became so severe he was forced to stop work and go to bed. There was nausea but no vomiting. An exploratory laparotomy was done. The omentum and peritoneum in the upper right quadrant were congested. A tumor mass was felt in the region of the right kidney. On stripping away kidney fat a fracture in the markedly thinned kidney parenchyma could readily be palpated through the unbroken capsule. The capsule was opened and about 8 ounces of a thin blood stained, purulent fluid expressed. A portion of this fluid was obtained for laboratory examination. From direct smears without sedimentation, large numbers of intracellular and extracellular gram-negative, biscuit-shaped diplococci were demonstrated. A pure culture of the gonococcus was obtained on 1 per cent. glucose-acetic fluid agar.

Medical Record, New York

Feb. 18, 1922, **101**, No. 7

Sleep (Normal and Abnormal) and Mechanism of Sleep. J. V. Haberman, New York.—p. 265.
Actinomycosis: Report of Case. E. A. Vander Veer and A. M. Dickinson, Albany.—p. 273.
Complications and Sequels of Influenzal Pneumonia. O. S. Wightman, New York.—p. 274.
Cancer Death Rate in New York City During 1921. L. D. Bulkley, New York.—p. 276.
Case of Septicopyemia and Recovery. G. W. Stone, New York.—p. 277.
Exophthalmic Goiter and Digitalis. I. Bram, Philadelphia.—p. 279.
Moonshine Whiskey Psychosis. B. Lenchen, Dunning, Ill.—p. 280.
Pregnosis in Infancy and Childhood. J. H. Marcus, Atlantic City, N. J.—p. 282.

Feb. 25, 1922, **101**, No. 8

*Transient Hemiplegia. W. G. Thompson, New York.—p. 311.
Treatment of Gonococcal Infection in Female. V. C. Pedersen, New York.—p. 314.
Antiseptics in Treatment of Infected Wounds. R. J. Behan, Pittsburgh.—p. 319.
What Schools May Accomplish in Social Adaptations. L. P. Clark, New York.—p. 323.
Indications and Contraindications for Tonsillectomy. S. Cohen, Philadelphia.—p. 325.
*Pericarditic Pseudopneumonia in Children. M. S. Lewis, New York.—p. 327.
Resolution in Pulmonary Tuberculosis. O. Paget, Perth, West Australia.—p. 329.

Transient Hemiplegia.—Thompson suggests that these cases may be caused by arteriospasm of the cerebral vessels, causing temporary localized cerebral block, or pressure from a localized cerebral edema of toxic origin which, being capable of more prompt reabsorption than a blood clot, restitution of normal function quickly ensues. It is also conceivable that certain brains, more readily than others, from some minute anatomic difference, develop prompt compensation, so that when particular fibers or cells are put out of commission, either through sudden interruption of the circulation which supplies them or through localized pressure, others soon take over their temporary function for them.

Pericarditic Pseudopneumonia in Children.—Attention is directed by Lewis to the fact that associated with pericarditis with effusion there are found definite abnormal physical signs indicating some sort of a pathologic condition at the left scapular angle. The signs of apparent consolidation at the left scapular angle are, in all probability, due to the compression of the pulmonary tissue either by the heart or by the pericardium, or by both. The frequency of these signs and their location at the left scapular angle indicates that there is some casual relationship to the acute pericarditis, such as (1) a distended pericardial sac presses on the lung producing a mechanical atelectasis; (2) an inflammatory process extends from the pericardium to the pleura or lung causing changes that are responsible for the pulmonic signs; (3) pressure is exerted on the lung by a dilated heart or a pleural effusion. These pulmonary signs seem to have little influence on the course of the disease, as the signs at the left scapular angle disappear with the improvement of the pericarditis.

Mental Hygiene, Albany, N. Y.

January, 1922, **6**, No. 1

Some Problems of Disabled Ex-Service Men Three Years After Armistice. T. W. Salmon.—p. 1.
Status of "Clinical" Psychology. F. L. Wells, Boston.—p. 11.
Care of Neuropsychiatric Disabilities Among Ex-Service Men. D. A. Thom and H. D. Singer.—p. 23.
Influence of Affecting Disturbances on Responses to Stanford-Binet Test. S. P. Jewett and P. Blanchard, New York.—p. 39.
State Care, Training and Education of Mental Defectives. P. Bailey.—p. 57.
Laziness in School Children. I. S. Wile, New York.—p. 68.
Crossbreeding of Ideas as Factor in Invention. T. H. Haines.—p. 83.
Personal Psychiatric History. L. Kline.—p. 93.
Case Correspondence: Method of Psychiatric Social Work. E. C. Hayes.—p. 125.

New Orleans Medical and Surgical Journal

February, 1922, **74**, No. 8

Blood Transfusion in Obstetrics. E. L. King, New Orleans.—p. 549.
*Case of Raynaud's Disease. R. S. Crichlow.—p. 556.
Removal of Foreign Bodies from Eye. H. D. Burns, New Orleans.—p. 559.
Treatment of Empyema. F. W. Parham, New Orleans.—p. 571.
How Apothesin Compares with Other Agents Used in Spinal Analgesia, with Special Reference to a Near Accident in Case of Prostatectomy. P. J. Gelpi, New Orleans.—p. 586.

Case of Raynaud's Disease.—Crichlow reports a case in which he noted "attacks of cold, dead, bloodlessness in the fingers or toes as a result of exposure to cold or to emotional excitement (local syncope). In the more advanced cases there are capillary congestion and mottled and livid swelling (local asphyxia). Later, still in more advanced cases, thrombosis and resulting gangrene which is usually symmetrical," as originally described by Raynaud.

Philippine Journal of Science, Manila

October, 1921, **19**, No. 4

Kao Pan Seedless Siamese Pummelo and Its Culture. O. A. Reinking and G. W. Groff.—p. 389.
Philippine Tenebrionidae, II. H. Gebien, Hamburg, Germany.—p. 439.
Philippine Nemestrinid (Diptera). C. S. Banks.—p. 517.

Porto Rico Medical Association Bulletin, San Juan

Dec. 31, 1921, **15**, No. 134

*Dietetic Deficiencies Predisposing to Sprue, Pellagra and Beriberi in Porto Rico. Bailey K. Ashford.—p. 249.
MacDonagh Reaction in Diagnosis of Syphilis. L. Yordán Pasarell.—p. 259.
*Pyrexias in Porto Rico. A. Torregrosa.—p. 263. Cont'd.
Modern Dietetics Applied to Porto Rico. R. del Valle Sárraga.—p. 289.
Vitamins. A. Marxuach.—p. 303.

Dietetic Deficiencies Predisposing to Disease.—Ashford asserts that dietetic deficiencies may predispose to sprue, pellagra and beriberi, but that this is not the causal factor. "The Mount Olympus of medicine is a democracy of gods. The goddess of dietetic deficiencies has to take account of the god of infections, and both are subordinate to the Jupiter of clinical research." In Porto Rico there is no pellagra or sprue notwithstanding the scanty diet, but he has encountered about 100 cases of beriberi, although this is very rare. It occurred only in the troops, and in them only among those who refused the meat and vegetables in the abundant army ration.

Common Pyrexias of Porto Rico.—In this long instalment of his important monograph Torregrosa reviews the clinical pictures presented by a combination of malaria and helminthiasis, malaria plus Malta fever, or associated with an eruptive disease. He discusses further the points which differentiate influenza from malaria, and the combination of

influenza with pulmonary tuberculosis. He cites freely from his own extensive experience. The previous instalments have been summarized as they appeared.

South Carolina Medical Association Journal, Greenville

February, 1922, **18**, No. 2

Syphilis of Uterus.—Sosnowski discusses the symptoms and pathology of this condition as he found them in eighty-seven cases. The syphilitic affections of the uterus are, first, the initial sore seen, not rarely, on the cervix; second, the uterine discharge—leukorrhea and metrorrhagia—seen during the eruptive stage of the disease; third, the engorged or wet uterus seen in the early part of the later phases of the disease; fourth, the contracted or dry uterus seen in the later stages, and fifth, the peri-uterine adhesions seen in some cases toward the end of the wet hyperplastic stage.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb. 11, 1922, **1**, No. 3189

Treatment of Gastric Ulcer.—Unless it perforates, White says the acute ulcer requires only medical treatment. Perforation requires instant surgery. Ulcers should not be operated on when bleeding. The medical treatment for bleeding from a gastric ulcer of any sort is absolute rest in bed in a quiet room without visitors and enough morphin to keep the sufferer gently under its influence. If the symptoms show the bleeding has been excessive, 2 grains calcium chlorid dissolved in water should be injected intramuscularly night and morning. No food or drink should be given by the mouth or otherwise for twenty-four hours. At the end of this time, dextrose in solution in tap water, 525 grains to the pint, may be given by the rectum, half a pint two or three times a day. In two or three days at the latest some milk in hourly or half-hourly feeds should be given by the mouth, and, as rapidly as possible, the patient should be got on a diet suitable for ulcer of the stomach. White says that very many patients have been lost from too prolonged rectal feeding and consequent starvation. Transfusion may be of great help, but, in the nature of things, it is unfortunately often impossible to carry it out at short notice. Drugs given by the mouth are of very little value in arresting gastric bleeding.

Primary Carcinoma of Lung.—The chief points of interest in the case cited by Haynes and Gaskell were the age of the patient, 27 years; the duration of symptoms, five months; the similarity to tuberculosis of the lungs; the temporary improvement under open air treatment, due to the elimination of secondary infection; the total absence of pain; the involvement of one lung only, and, finally, the rapid enlargement of the mediastinal and cervical glands. The right lung was extensively involved while the left lung was unaffected, but yet the left cervical glands were considerably more affected than the right, the path of spread being probably along the course of the thoracic duct.

Diagnostic Sign of Acute Appendicitis.—The sign which Rowe believes to be unequivocal is observed only in the earliest stage: the patient complains of abdominal pain, particularly referred to the epigastrium; he looks ill and is generally vomiting; the decubitus is dorsal. Examination of the abdomen reveals in the upper left epigastric region skin hyperesthesia and intense tenderness, with tonicity of the left half of the uppermost segment of the left rectus abdominis muscle. On the contrary, there is no tenderness nor muscle rigidity over the right iliac fossa. Three or four hours later, there is a commencement of slight pain, tenderness and rigidity in the region usually described, if one elects to wait so long. On opening the abdomen one finds a process of great omentum approaching, applied to, or actually wrapped around, an acutely inflamed appendix, according to the time which has elapsed since the appearance of the epigastric distress. On account of this phenomenon Rowe speaks of the epigastric syndrome as the "collison mat" sign—a naval analogy, the omentum being applied to the threatened perforation much as a collision mat is placed over a leak in a warship's hull. Whether or not this sign occurs in every case of acute appendicitis Rowe cannot say, but he is convinced that it does become manifest in every case calling for early operation.

Feb. 18, 1922, **1**, No. 3190

Obscure Intestinal Colic.—For many years Gray has maintained that true visceral pain and discomfort arise from, and are primarily referred to, the mesentery, and that from this source it may or may not also be referred to the associated somatic nerves. In this paper he discusses the mesenteric stimulation initiated by the peristaltic wave, which constitutes intestinal colic. He emphasizes the frequency with which recurrent abdominal pain disappears without laparotomy on the removal of a remote source of infection—that is, teeth, tonsils and adenoids, etc.—such treatment removing the origin of recurrent inert areas. Obscure intestinal colic may arise from temporary causes and be of no real significance; its treatment may be medical, or it may constitute a grave warning of an impending surgical crisis. A full, understanding of its significance depends on an appreciation of the fact that the bowel itself is insensitive; that the colicky pain arises from, and is referred to, the mesentery; and that the mechanism of colic consists in the natural attempt of the bowel to drive onward a diseased or inert area, thereby inducing an abnormal tension on the associated mesentery.

Value of Pyelography in Hydronephrosis.—Three cases of hydronephrosis are reported by Morson and White in each of which the diagnosis remained doubtful until the patient had been submitted to pyelography.

Bone Clip for Fractures.—These clips and their use were first described by Adams four years ago. He reviews end results which demonstrated the fact that these clips do not interfere with the growth of the bone.

Sodium Taurocholate as Vehicle for Pediculocide.—As bile salts are stated to assist the passage of emulsions of fats through the mucous membranes by their property of reducing surface tension, it occurred to Peters they might have the same effect in assisting oily emulsions to penetrate the shell of the louse's egg. Experiments were made with various strengths of sodium taurocholate in watery solution with eucalyptus and sassafras oils. The best compound was found to be: sodium taurocholate, 10 gm., oil of eucalyptus, 50 c.c., and water, 1,000 c.c. A higher concentration of bile salt rendered the hair very sticky, while a lower concentration did not form so good an emulsion. More than 5 per cent. eucalyptus rapidly separated out. Most lice, if immersed in the liquid, cease movements in a few seconds. In no case did any of those tested recover when dried on blotting paper

and incubated. Larger insects, such as wasps, house-flies, and fleas, when dropped in the emulsion became wetted all over immediately, and died in less than a minute. The emulsion has been tried on more than 500 patients on whose heads living lice were seen. It is well rubbed into the head until all the hair is wetted. The head is then wrapped in a bathing cap or towel and the application left on all night. The head is washed with soap and water next morning, and a fine toothed comb used daily for a fortnight. In 23 per cent. of the cases no lice were found after one application. In the remainder a few recently hatched very small forms were discovered. A second application on this reappearance sterilized 63 per cent., while 14 per cent. required a third application.

Journal of Pathology and Bacteriology, London

January, 1922, **25**, No. 1

Hemolyzing Substance in B. Welchii Toxin.—Henry's report details with an in vitro investigation of the hemolyzing substance present in *B. welchii* toxin, the method employed being a modification of that originally devised by Madsen for the study of tetanolysin. Complete neutralization experiments confined within the limits of the observations recorded show that the neutralization of this hemotoxin follows the law of multiple proportions. The results of fractional saturation experiments, when represented graphically, give curves which are not unlike those obtained by Madsen for tetanolysin.

Malignant Sacrococcygeal Chordoma.—Stewart records a case of malignant chordoma (chordocarcinoma) of the sacrococcygeal region and reviews the literature on the subject. The present case is said to be the twenty-sixth chordoma of clinical interest on record, and the ninth example of a sacrococcygeal tumor of this kind. A man, aged 65, had a slowly growing solid tumor over the coccyx, which in eight years had attained the size of an orange. It was excised and histologic examination showed it to be a typical malignant chordoma (chordocarcinoma). After five years a disseminated mass made its appearance in the left buttock, and about three years later a nodule appeared over the right scapula. These masses also grew slowly, but while the latter tumor remained discrete and well encapsulated, the former ultimately caused great destruction of the femur and iliac blade. The patient died eleven years after the excision of the primary growth, and no evidence of general dissemination was found postmortem.

Blood Platelet Antiserum.—Bedson states that of various antiserums prepared by immunization with blood elements (cellular and otherwise), antiplatelet serum alone produces purpura. This purpura is the result of the action of platelet antibody and takes place independently of any hemagglutination. An extensive, though temporary, reduction in the number of platelets in the circulating blood of the rabbit does not give rise to purpura. Experimental evidence is brought forward to show that the two main factors concerned in the production of the hemorrhages are (*a*) toxic action on the endothelium of the vessels, and (*b*) removal of the platelets from the circulation. The serologic specificity of antileukocyte serum, as far as blood cells are concerned, is paralleled by its specificity when tested in vivo.

Medium for Cultivation of Gonococcus.—Plasma medium is used by Jenkins for the cultivation of the gonococcus. It is prepared as follows: Nutrient agar of reaction plus 6 (Eyre) and solidity 4. To the medium 1 per cent. plasma made with powdered sodium citrate is added, then the mixture is poured into tubes or plates and tested for sterility by incubation. The agar should be at a temperature of 55 C. when the plasma is added. The incubator temperature should be 35 or 36 C. A dish of water should be kept alongside the cultures in the incubator. The medium so prepared is used by Jenkins at the rate of nearly 100 tubes a week, and has never failed to fulfil all requirements.

Lancet, London

Feb. 11, 1922, **1**, No. 5137

Instability of Body Chemistry Cause of Bronchial Asthma.—Instability of the body chemistry is discussed by Latham in its possible relationship to asthma as an etiologic factor. This instability only becomes evident under a certain set of circumstances. In other words, something has to happen to make the individual sensitive to a particular substance or substances.

Complete Heart Block.—Waldo and Herapath cite the case of a man, aged 62, always of temperate habits, who contracted a primary sore thirty years ago. For ten years he took mercury either by the mouth or by inunction, but had never had intravenous or muscular injections of any kind. Seven years ago he developed a gumma on the back of his wrist, which recurred within six months. He had several attacks resembling petit mal, the first two without and later ones with loss of consciousness; he passed urine involuntarily, though he never bit his tongue. He complained of some shortness of breath, especially when ascending stairs, but had no cardiac pain of any kind. There was a well marked systolic murmur all over the front of the chest with increased cardiac dulness and a rather feeble impulse displaced downward and outward; the pulse was 44, regular and not of the Corrigan type. The systolic blood pressure in August, 1918, was 110 mm. Hg. In February, 1920, the diagnosis was made of heart block with destruction, probably complete, of the auriculoventricular bundle. The heart was very large, all chambers being markedly dilated and both ventricles very much hypertrophied. The auriculoventricular rings were wide, and the heart increased in length from base to apex. The muscle was fatty and friable. There was atheroma of the ascending portion of the aorta. The coronary arteries were somewhat occluded and much thickened wherever cut across. The right surface of the auricular septum was hard and glistened as though it were more fibrous than usual. A microscopic study was made of various parts of the heart wall.

Nomogram for Calculating Surface Area of Body.—The nomographic method is used extensively by engineers. The characteristic feature of a "nomogram," or alinement chart, is that three lines are graduated with scales representing three different variables, so that any straight line cutting these three scales will intersect them at three points in such a way that the graduations read off at these points will satisfy a given relationship between the three variables. The use of this method in calculating human body surface area is described in detail by Feldman and Umanski.

Precipitation Test for Syphilis.—Wang uses an antigen which is an alcoholic extract of the human heart. The serum to be tested is inactivated for from ten to fifteen minutes at 55 C.; 10 drops of saline are added and then the antigen in the manner described. A positive serum is signified by a distinct precipitation.

Perforated Gastric Ulcer with Postoperative Sequels.—In this case Milsom and Norbury invaginated the ulcer by a row of Lembert's sutures reinforced by an omental graft

and the abdominal wall was closed. Five days later the patient manifested symptoms indicative of either pyloric obstruction, the result of invagination; or acute atonic dilatation of the stomach. The unusual feature of this case were: (1) gradual onset of acute symptoms due apparently to a minute leak from the stomach; (2) severe attacks of pain, apparently of sympathetic origin, referred to the penis, with inability to pass water, and accompanied by opisthotonos; (3) marked postoperative acute dilatation of the stomach, with persistent vomiting, which was instantly relieved by gastric lavage; (4) occasional attacks of cardiospasm.

Bulletin de l'Académie de Médecine, Paris

Jan. 3, 1922, **87**, No. 1

*Histology of Tuberculous Enteritis. E. Lenoble.—p. 18.
*Traumatic Tachycardia or Bradycardia. G. Ferry.—p. 20.
Aqueous Extract of Tubercle Bacilli. F. Berlioz.—p. 23.

Jan. 10, 1922, **87**, No. 2

Biologic Reactions of Tissue Extracts. Fenton B. Turck (New York) and H. Hartmann.—p. 31.
Modification in Respiration After Walking. C. Achard et al.—p. 42.
Case of Exocardia. V. Torkomian (Constantinople).—p. 48.

Development of Tuberculous Enteritis.—Lenoble describes the three phases: first a phase of diapedesis for the bacilli, and embolism, through an endarteritis. Then comes the phase of invasion of the follicles, and finally the invasion of the mesenteric glands. From these the bacilli pass to the liver. The ulceration may be due to massive elimination of the tubercle bacilli and their products, or it may be due to secondary bacilli, or to both these factors. Direct infection of the intestinal wall does not occur unless the mucosa is damaged or diseased from other cause. The stomach mucosa is practically always intact in this respect, although its mucosa is no more resistant than the bowel mucosa.

Bradycardia and Tachycardia from Emotional Stress.—Ferry recalls Laubry's report of a case of permanent bradycardia developing after contusion of the chest over the heart. He compares with this the cases of two aviators, one of whom after some parachute jumps developed paroxysmal tachycardia when going up in the airplane, or at the mere memory of the parachute experiences. The heart beat dropped to 40 in the other aviator after a very high flight, without oxygen, after a period of overexertion and autointoxication. The emotional strain superposed on a physical trauma thus may upset the nervous balance and entail tachycardia or bradycardia according to whether the system was in good condition or not beforehand.

Bulletin Médical, Paris

Feb. 11, 1922, **36**, No. 7

*Otitis in Young Infants. D. Denéchau and R. Amsler.—p. 111.
*Obesity with Atypical Distribution of Fat. F. Heckel.—p. 113.
Recent Literature on Therapeutics. G. Lyon.—p. 117.

Otitis in Young Infants.—Denéchau and Amsler do not join either side in the debates on the extreme prevalence of otitis in very young infants, but they state that in their own service, last summer, 12 of the 45 infants with diarrhea had also a discharge from one or both ears. The otitis persisted when the few infants that recovered were taken home; necropsy in 7 confirmed the purulent otitis. In addition to operative measures they advocate an autogenous vaccine, calling attention to one of their cases in which marked benefit followed the autogenous vaccine in one of the older infants with chronic otitis.

Inferior Obesity.—Heckel refers to women with a normal figure above the waist while the hips, thighs and legs show extreme obesity. This inferior obesity generally begins at puberty and is a special type that requires special treatment. Usually, the hair on the body is scanty, the expression gentle and timid, the mouth small. Puberty is late and menstruation irregular, but if these women marry they are fertile. Treatment has to be more active than for general obesity. Heckel enforces complete repose at first, no massage, no walking. Starches, fat and sugar must be restricted in the diet; rare meat, salads and fruits are the main reliance, and thyroid, ovarian, suprarenal and pituitary treatment is pushed. These patients bear ovarian treatment in large doses exceptionally well. The benefit is pronounced almost from the first. The doses that have given the best results were 0.2 gm. of thyroid extract and the same or a little more of ovarian and pituitary extract. If the pulse is still below 100 after a week of this treatment, and if there are no signs of toxic action (insomnia, headache, pains in limbs, diarrhea, restlessness) he continues the treatment. With signs of toxic action he suspends it every third week. The epinephrin is given as a stimulant for the depressed sympathetic nervous system, injecting subcutaneously 0.5 mg. of nonsynthetic epinephrin in 5 c.c. of physiologic saline. The circumference of the hips, calves, etc., is recorded systematically to show the progress realized. When the weight has materially declined, then he orders vigorous exercises, especially bicycle riding, the legs in heavy woolen underwear. The exercise and sweating thus induced usually aids in throwing off the last of the obesity. In all treatment of obesity in women, the diet and organotherapy stage must be kept separate from the exercise stage which crowns the work. He theorizes that thyroid treatment is the least specific; it acts on all the glands. Epinephrin, on the other hand, seems to have a remarkable regulating action on the sympathetic system in general.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 30, 1921, **45**, No. 39

*Fever in Late Stages of Syphilis. F. Bialocour.—p. 1721.
Tartrobismuthate of Potassium and Sodium in Treatment of Inherited Syphilis. L. Tixier.—p. 1724.
Neurofibromatosis Girdling Chest. Souques et al.—p. 1729.
Pernicious Anemia After Hemolytic Jaundice. E. Duhot.—p. 1733.

Febrile Tertiary Syphilis.—This is Bialocour's third publication since 1900 on the syphilitic septicemia which is revealed by a remittent or continuous fever, without sweats, but with nocturnal headache as a rule. The general health keeps good although the liver and spleen are usually enlarged. The fever may keep up for years, but the clinical picture generally subsides promptly to normal under specific treatment.

Jan. 13, 1922, **46**, No. 1

*Neurofibromatosis of the Trunk. A. Léri.—p. 6.
Thorium in Treatment of Chronic Dermatoses. Id. and Thomas.—p. 10.
*Compression of Superior Vena Cava. M. Chiray and Semelaigne.—p. 13.
*Quinidin in Treatment of Arrhythmia. C. Lian, V. Robin et al.—p. 23.
Dilation of Pulmonary Artery. Crouzon and Grenaudier.—p. 34.
*Spondylitis in Lumbar Region. Robineau and R. A. Gutmann.—p. 38.
Organic Disease Suggesting Hysteria. Bruhl et al.—p. 44.
*Gas Gangrene in Gallbladder. Hallé and Marquézy.—p. 49.
*Occupational Purpura. C. Flandin and J. Roberti.—p. 58.
Contraindications to Vaccination. Ramond et al.—p. 65.

Neurofibromatosis.—In the young man the skin is normal, but there are numerous subcutaneous nodules along the course of the superficial nerves. There are also a number of nevi.

Aneurysm Compressing Superior Vena Cava.—The compression from the aneurysm in the aorta caused various disturbances and compensating processes. Great transient relief was experienced by drawing 50 or 100 c.c. of blood from the jugular vein. It relieved the headache and warded off the jacksonian epilepsy seizure. The benefit from it lasted for twenty-four or thirty-six hours.

Quinidin in Treatment of Arrhythmia.—A number of the members of the society here describe their experiences in this line. Several warn of the necessity for prudence and reserve in estimating the action of quinidin, and the indications for it.

Spondylitis of Lumbarthria Type.—This type of chronic deforming rheumatism is characterized by pain in the lumbar region and osteophytes, beaklike protuberances sometimes bridging two vertebrae. In a case described, the spondylitis began two weeks after an attack of anthrax, and then for four years there had been severe pains of the type associated with disease in the funiculi, rather than in the nerve roots. Another case is described in which anthrax was responsible for osteitis in the spine. In these cases and in others like them, after exclusion of syphilis, Pott's disease, compression from a neoplasm, and involvement in the disease of some adjoining viscus, and when the chronic nature of the disturbances, rebellious to ordinary measures, is beyond question,

then laminectomy should be considered, regardless of whether roentgenoscopy is negative or not. Laminectomy in the lumbar region in the case reported here put an end at once to all the pains in the lumbar region, and they have never returned. This was also the outcome in Sicard's five cases of old incapacitating, chronic lumbago of the pure lumbalgia type. The arthritis of the openings in the vertebrae is responsible for the symptoms, and laminectomy seems to cure it.

Gas Gangrene of the Gallbladder.—The necropsy of the woman of 60 revealed that *Bacillus perfringens* was solely responsible for the clinical picture beginning with what seemed to be gallstone colic, then cholecystitis, and right pneumonia. The gallbladder was found gangrenous but there was no jaundice at any time, and no gallstones were discovered. The whole course was less than two weeks.

Fatal Purpura from Occupational Poisoning with Benzol.—The young woman had been employed for nearly two months in an automobile factory, working with rubber dissolved in benzol, in what was called the "heating room." Three or four men and two women were employed in this unventilated room; they were entitled to leave it frequently to breathe purer air. Headache, dizziness and pallor had been followed by hemorrhagic purpura, with fever, acute anemia, and death within three weeks. There had been three previous cases of purpura within six months in the persons employed in this room, but only one was fatal. Some recent research indicates that commercial benzene (benzol) is more toxic than crystallizable benzene, and that this is more toxic than benzene obtained from calcium benzoate. Persons using benzol should have their blood examined frequently.

Journal de Chirurgie, Paris

January, 1922, **19**, No. 1

Fate of Nerve Grafts.—From their analysis of 216 cases in which various surgeons grafted nerves from the patients or from other patients or from animals, Gosset and Charrier conclude that the final outcome is far from encouraging. The results can be called good only in 5 of the autograft cases; 2 of the homografts and in 5 of the heterografts among the 99 cases under observation for a long time, that is, in only 17 per cent. In 57 other cases in which nerves were sutured, good results were obtained in 40 per cent. and 40 per cent. of the others were improved.

Journal d'Urologie, Paris

November, 1921, **12**, No. 5

Spasm of Calices Revealed by Pyelography.—Kummer injected 25 c.c. of the contrast suspension into the right kidney, but later found that no more than 6 c.c. could be tolerated. The radiographic findings and other data apparently establish that the musculature of the calices had contracted, this muscular spasm having shut off the pelvis.

Calculi in the Ureters.—The combination of catheterization and radiography not only throws light on the case, but it usually demonstrates that operative measures are indispensable, and that the danger for the kidney is greater with a calculus in the ureter than with one in the kidney itself. Aloi explains the advantages of access by the extraperitoneal and parainguinal iliac route.

Syphilitic Disease of the Bladder.—Cosacesco warns that this is probably more frequent than generally recognized. In a case reported it presented the cystitis form, and the prompt benefit from general treatment for syphilis, without any local measures, confirmed the diagnosis. Not a trace was left in three weeks, and there has been no recurrence during the seven months to date. Syphilitic disease of the bladder may develop without cystitis, with hematuria as the only or the main symptom. Chocholka reports what he says is the twenty-first case on record in which syphilis of the bladder was diagnosed solely by the cystoscopic findings. His patient was a woman of 36 with three healthy children. She had complained for a week of pain at micturition, and the bladder region was tender. Cystoscopy disclosed that the mucosa was studded with papules, and the Wassermann test was positive. Under treatment for recurring syphilis the symptoms and all signs of papules disappeared.

Médecine, Paris

January, 1922, **3**, No. 4

Subconjunctival Injections.—Terrien lists detachment of the retina, iridochoroiditis and infected wounds of the cornea as the indications for subconjunctival injection of a few drops up to 0.5 or 1 or 2 c.c. of a 3 or 4 per cent. sodium chlorid solution. Detachment of the retina is now regarded as practically incurable, but unless an operation is planned, 1 or 2 c.c. of the saline should be injected every fourth or sixth day, for a trial at least. These injections may give surprising results in subacute and torpid forms of iridochoroiditis, not the acute forms. In one case of bilateral subacute iridocyclitis and slight hypopyon, with vision reduced to perception of light, injection of mercuric cyanid was followed by a complete cure in a few days. Addition of a little procain renders the injection painless.

Extraction of Cataract in the Capsule.—The advantages of Barraquer's method of vacuum extraction of cataract in the capsule are extolled and the technic illustrated. There is not the slightest pressure on the eye with it, but the eye has to be profoundly anesthetized and the pupil extremely dilated. Barraquer's thousands of cases, it is stated, show restoration of visual acuity up to 8:10 to 10:10 in 70 per cent. of the cases, and he claims that it does away with all risk of secondary cataract.

Medical Treatment of Cataract.—Genet queries whether any medical treatment is of any use in arresting the tendency to cataract. To date, no local measures have proved certainly effectual, but they deserve more thorough trials, especially serotherapy with a phacolytic serum obtained by repeated injection of animals with an extract of fresh crystalline lenses. No one has ever seen a ripe cataract retrogress under potassium iodid, but certain writers have reported an arrest in the progress of the cataract, and some even a clearing up of the lens under it. Genet himself has never observed this, but he has been impressed with the difference in the time required for ripening of the cataract in certain cases, regardless of whether medicine is taken or not. He warns that quacks pretend to cure cataract by using atropin which materially increases the visual acuity while its effect lasts.

The Ocular Sequelae of Epidemic Encephalitis.—As a rule, the optic nerve is not affected by epidemic encephalitis, but a few instances are known of scotoma and blanching of the papillae. Cerise cites three clinicians who have reported a few cases of bilateral complete atrophy of the optic nerve. The motor disturbances may range from mere insufficiency of convergence to intense parkinsonian symptoms, and they seem to be permanent if they have survived the first acute stage. These durable disturbances from defective conver-

gence are extremely annoying, and breed nervous and mental disorders. It is important to be on the lookout for these sequelae of epidemic encephalitis. The patients apply for relief because near vision is becoming defective, and they need glasses. The condition is easily mistaken for defective accommodation. This may be present also, but the disturbance in vision may be cured by glasses to correct convergence, although the diplopia may still persist in lateral vision.

Parenteral Injections of Milk in Eye Disease.—Chenet declares that the results have been satisfactory in some cases and poor in others. He has never witnessed any "marvellous" results such as others have reported from intramuscular injections of 5 to 10 c.c. of cow's milk.

Salves in Treatment of the Eyes.—Toulant urges the advantages of animal or vegetable fats for the vehicle, rather than the irritating and nonabsorbable petrolatum, to use in and about the eyes. Salves may be preferred to a collyrium for corneal ulcer, for disease of the lids and chronic conjunctivitis, and for revulsion. As a vehicle for an alkaloid, the finer the trituration the less active the effect.

Otorhinolaryngology in 1921.—Baldenweck remarks that the two French ear and throat journals that suspended during the war are soon to resume publication. He cites some specialists who have reported favorable results from vaccine therapy in otogenous septicemia and meningitis, in ozena and hay-fever, and states that it is now systematically used by five otologists, including himself, in furunculosis of the meatus. He mentions also the success of Lermoyez and Vallery-Radot in treatment of recurring nasal hydrorrhea by antianaphylaxis. (Summarized in THE JOURNAL, Oct. 29, 1921, p. 1451). This opens a prospect for similar treatment of spasmodic coryza, etc. The frequency of latent otitis and mastoiditis in infants has been one of the topics of the year. (Discussed in these columns, Dec. 3, 1921, p. 1847.) Laval has called attention to the slowing of the pulse with suppuration in the ear and mastoid. Lermoyez and Eeman have reported research on tuberculous otitis media, and Féré on complicating otitis in typhoid. Ardenne warns to seek for syphilis in deafmutes, and Roger has reported a case of tumor in the cerebellopontine angle in which normal equilibration seemed to be restored by radiotherapy. An important work by Jacques on fracture of the nose (summarized here, Oct. 15, 1921, p. 1289); another by Sebileau on injury of the internal carotid in operating on the tonsil, and several on dilatation of the esophagus conclude his review of recent progress.

Action of Mumps on the Ear.—Moulonguet deplores the futility of all treatment to date in the cases of sudden absolute deafness which is a rare but not an exceptional complication of mumps. It appears suddenly at the onset or during the course or decline of the mumps, at any age, from infancy to middle age. The disturbance is possibly in the auditory nerve trunk at the base of the brain or in the internal meatus; systematic lumbar puncture shows the mumps meningitis reactions.

Chronic Pharyngitis.—In discussing the local and general treatment of chronic pharyngitis, Chavanne emphasizes the importance of the neuro-arthritic diathesis and of a sedentary life in predisposing to recurrence of pharyngitis, saying that the throat often spontaneously returns to clinically normal after a good gallop or mountain climbing. He adds that the men in the trenches found that their chronic pharyngitis was temporarily cured, notwithstanding the cold and the wet.

Treatment of Vertigo.—Vernet remarks that when there is some local cause for irritation in the labyrinth, which it is impossible to remove, and also after exclusion of impacted cerumen, cholesteatoma, obstruction of the tube or other manifestation of otitis media, palliative treatment is the only recourse. From simple fleeting vasomotor disturbances up to the full Menière syndrome there are all kinds and degrees of sympathetic vasomotor capillary derangement. This has an endocrine basis, and epinephrin has an unmistakable beneficial action in these conditions. It stimulates electively the terminals of the sympathetic nervous system, while regulating the blood pressure and exerting an antitoxic action. He gives 10 drops half an hour before meals twice a day of the 1:1,000 solution, on alternate weeks. No other drug should be given with it, but in some cases the vertigo yields better to pilocarpin than to epinephrin.

Blocking the Laryngeal Nerve to Arrest Spasmodic Cough.—Halphen gives no figures, but states that injection of alcohol to block the superior laryngeal nerve has improved conditions materially in the majority of the cases of whooping cough treated, and in several cases of laryngitis and tracheitis. He injects 2 or 3 c.c. of alcohol, (90 degrees) not heated, the needle half way between the cornu of the hyoid bone and the cornu of the thyroid. The first injection may bring on a severe coughing spasm, but the injection on the other side does not induce any appreciable reaction. In the few refractory cases, the failure was probably due to imperfect technic. The method is absolutely harmless, he adds, and should be given a trial in all severe and persisting spasmodic coughs.

Foreign Bodies in the Larynx.—Levesque is convinced that extraction under laryngoscopy induces a reaction in the larynx which compels secondary tracheotomy more often than is published. Preliminary tracheotomy is frequently advisable for children. The symptoms from a foreign body in the esophagus often cannot be distinguished from those with a foreign body in the larynx.

Paris Médical, Paris

Jan. 21, 1922, **12**, No. 3

Diseases of the Respiratory Organs in 1921.—This annual review mentions in particular recent works on asthma, on syphilitic disease of the bronchi, and on surgical treatment of purulent pleurisy.

Spasmodic Tracheobronchitis.—Bezançon and de Jong call attention to the spasmodic coughing at certain regular hours, usually with mucous sputum containing eosinophils, but there is no dyspnea. The spasms of coughing may recur during a period of several weeks, interfering with sleep, but auscultation is negative. The treatment is that of asthma in general. Nose sprays containing atropin may be useful, while powders and medicated cigarettes may aggravate the cough. Any lesion in the nose must be corrected, and general hygiene be enforced. Sometimes nothing but a sudden change of air will conquer this tendency to spasmodic coughing.

Surgical Treatment of Acute Purulent Pleurisy.—Schwartz declares that the aim of treatment should be the obliteration of the suppurating cavity, and nothing accomplishes this so completely and so harmlessly as means to restore elastic expansion to the lung. An incision in the ninth or tenth interspace, on the posterior axillary line, provides for drainage, and systematic, continuous respiratory exercises and spirometer exercises maintain the elasticity of the lung. These respiratory gymnastics should be begun early, and be supplemented by twenty or thirty minutes of general gymnastics twice a day. As soon as the fever has subsided, the patient should get up and walk. One patient by the twentieth day was taking a long walk every day. By these means the formation of a hard shell over the lung is prevented, so that decortication will not become necessary. He reports four recent cases cured in this way, without any fistula, or with the rapid cure of an old fistula, in one case consecutive to a focus of gangrene in the lung that had opened into a bronchus. A concomitant focus of osteitis in a rib healed at the same time, after the casting off of the necrotic tissue, and without any deformity of the chest. In short, he reiterates in conclusion, the lung can be depended on to obliterate the suppurating cavity if whipped up and encouraged to do this.

Syphilitic Disease of Bronchi and Lungs.—Balzer describes some typical cases of a very fatiguing cough that had been recurring every night for several months but finally subsided under arsenical treatment. It returned a few months later and again subsided under the arsenical treatment, and this time permanently. Inherited syphilitic disease of the lung may develop early or not until maturity; cases have been published at the ages of 21, 28, 34 and even 41. The

cough and dyspnea are usually nocturnal, and there may be hemoptysis, with night sweats, and bronchiectasia develops in time. Syphilis should be suspected in all cases of bronchopneumonia tending to chronicity and sclerosis after measles, influenza and whooping cough. The lesions predominate in the central or lower portions of the lung, and are usually unilateral, while the general health keeps fairly good. In adults, the lungs are a comparatively rare location for syphilitic lesions, although the spirochetes may settle in a tuberculous lesion. The syphilis in this case tends to organization and sclerosis of the focus, while the tuberculosis aggravates the spirochetal lesions by the tendency to destruction of tissue. The patient's fate may depend on the insight of his physician, detecting the syphilis masked by other infection. Specific treatment may then save him, even when cachexia is installed. Mauriac says that treatment of pulmonary syphilitic lesions is liable to be more successful than with visceral lesions. The arsenicals are particularly effectual in syphilitic bronchitis simulating pulmonary tuberculosis.

Presse Médicale, Paris

Jan. 21, 1922, **30**, No. 6

*After Injury of Spinal Cord. J. Lhermitte and P. Pagniez.—p. 57.
*Removal of Cancer of Prostate and Rectum. L. Imbert.—p. 60.
*Antishock Treatment. Duhot (Brussels).—p. 61.
Serotherapy in Pneumonia. L. Cheinisse.—p. 62.

Case of Section of Spinal Cord.—The accident to the cord in the lumbar region at the age of 3 left complete paralysis of the legs, but they grew proportionately in length, although atrophied, with equinus deformity of both feet, but the bladder and rectum automatic functioning is fairly satisfactory. The comparatively normal development of the bones and muscle tissue in this case, although the lumbar and sacral portions of the spinal cord had been destroyed, testify that the normal play of the cerebrospinal centers is not such an indispensable influence as generally assumed. The boy is now 13.

Resection of Cancer Involving Both Prostate and Rectum.—Imbert separated the rectum down to the anus through a median abdominal incision, but did not detach the adherent prostate. The proximal stump of the colon was sutured in the wall for an artificial anus, and then the whole adherent mass was removed in one piece, including the prostate and lower portion of the bladder, through a perineal incision. The patient thus treated was extremely weak from repeated hemorrhages, and he died the fourth day. Perhaps it would have been better, Imbert suggests, if he had left an interval of a few days, at least, between the abdominal and the perineal operations. The technic is shown in seven illustrations; it seemed to answer its purpose perfectly.

Antishock Measures.—Duhot relates that he has been able to ward off all angiotoxic phenomena from injection of the arsenicals, even in the most intolerant, by adding a 50 per cent. solution of glucose to the drug dissolved in 2 c.c. of water.

Jan. 28, 1922, **30**, No. 8

*Angina Pectoris with Heart Disease. L. Gallavardin.—p. 77.
*Asthenia of Endocrine Origin. A. Sézary.—p. 79.
Rarity of Secondary Bacteriemia in Typhoid. Bloch and Hébert.—p. 81.
*Calcium Chlorid as Tonic for the Heart. L. Cheinisse.—p. 81.

Angina Pectoris from Valvular Disease.—Gallavardin describes ten cases of what seemed to be typical angina pectoris, but some valvular or endocardiac defect was probably responsible for the clinical picture. An aortic defect is generally traceable to syphilis, and hence specific treatment might be considered in such cases. In a previous series of 100 cases of true angina pectoris, in fifteen there was a concomitant aortic defect and syphilis was responsible for the latter in all but one case.

Asthenia of Endocrine Origin.—Sézary's research indicates that the suprarenals cannot be incriminated for asthenia which is not accompanied with an abnormally rapid exhaustion of the muscles, but the suprarenals are not responsible even in all the cases in which this occurs. In a case of adiposis dolorosa, the asthenia had been so pronounced for ten years that the woman was unable to be up and about for longer than fifteen minutes at a time. Epinephrin treatment gave only transient benefit, but systematic thyroid treatment, kept up with only brief suspensions, cured this chronic asthenia. In a tuberculous woman, with asthenia and bronzing, the dynamometer failed to indicate rapid exhaustion, and he insisted that it was not a case of Addison's disease. Necropsy showed sound suprarenals and degeneration of the liver.

Calcium Chlorid in Heart Disease.—Cheinisse reviews some recent articles on the calcium salts as heart tonics. Given by the vein, with digitalis by the mouth, they seem to speed up the action of the digitalis while checking its secondary effects, the irritation of the vagus and the dyspeptic disturbances. Singer gives by the vein 1 c.c. of a 10 per cent. solution of calcium chlorid. It acts immediately and the action is transient, in comparison to that of the digitalis given by the mouth at the same time.

Schweizerische medizinische Wochenschrift, Basel

Jan. 26, 1922, **52**, No. 4

*Hereditary Eye Abnormalities. A. Vogt.—p. 77.
Leukemic Tumor in Kidney. P. Steiner.—p. 89.
Treatment of Sterility. F. Ludwig.—p. 92.

Sex-Linked Inheritance of Ocular Defects.—Vogt declares that the exclusive appearance in males of hemophilia, dichromasia and other sex-linked hereditary defects and anomalies which are transmitted by the women alone, while the women never present them, testifies that the physiologic reason for this must be some change in the factors determining the sex. The theory of the unpaired chromosome is sustained by the nine new cases of transmitted red-green blindness he has been studying in five different matings. He thus offers data, he says, which have been lacking hitherto in human pathology. He gives the family trees of two new cases of red-green blindness found among 730 schoolgirls tested for color blindness at Basel, and compares them with the previously published tree of a family showing eleven cases of hereditary degeneration of the optic nerve. He was impressed by the relatively large proportion of women transmitters, and the transmission, latent, through generation after generation before the daltonism reappeared again.

Feb. 2, 1922, **52**, No. 5

*Heliotherapy in Nontuberculous Diseases. E. Amstad.—p. 105.
*Importance of Bile Salts in Urine. H. Müller, Jun.—p. 110.
*The Sachs-Georgi Test for Syphilis. J. Wolf.—p. 118.
Treatment of Diphtheria Bacilli Carriers. R. Ammann.—p. 121.

Heliotherapy for Nontuberculous Disease.—Amstad writes from Leysin to emphasize the beneficial effect of heliotherapy on the entire system, as is evident from the improvement in the blood picture. But, to realize this, the portion of the skin on which the heliotherapy is applied must be sound and physiologically efficient. In seventeen cases of lymphogranuloma, systematic heliotherapy arrested the disease for a year or two and the general condition was immeasurably improved. These patients had all been sent to Leysin as cases of advanced glandular tuberculosis. In an earlier stage, heliotherapy offers prospects of a complete cure. Rachitis also responds gratefully to heliotherapy, but the sun should be given a chance to prevent rachitis. Even the infant should get cautious sunbaths. Sun treatment of wounds is another important field. He begins after three days to expose the wounds to the sun, holding them open with retractors. Even large defects heal over in ten or twelve weeks. He remarks that heliotherapy in nontuberculous affections is still viewed askance by the general practitioner; rarely does he think of exposing a wound to the sun, and still more rarely of giving sunbaths to children with rickets. Internal medicine, Amstad adds, still gets its weapons only from the manufacturing chemists. The public is trained to depend on drugs. The idea of the supreme importance of general treatment, of the healing powers of Nature, has scarcely sprouted as yet.

Bile Acids in Urine.—Müller expatiates on the reliability of the fact that powdered sulphur will not float on urine containing bile acids. This Hay test differentiates hemolytic jaundice, by showing that there are no bile acids in the urine, while catarrhal jaundice, gallstones, etc., always are accompanied with bile salts in the urine whether there is jaundice

or not. With heart and kidney disease, a positive Hay reaction points to congestion in the liver. The Hay test is for the liver what the albumin tests are for the kidneys. Fever, disturbances in circulation, the action of poisons (alcohol, atropin, gasoline, etc.) and other generally injurious factors entail elimination of bile acids by the urine more regularly than they entail albuminuria.

Serologic Test for Syphilis.—Wolf found that the Wassermann and the Sachs-Georgi tests gave concordant findings in 4,300 specimens of serum. The latter is the more sensitive but it is not specific for syphilis and is useful only to control and supplement the Wassermann. He found it positive in 100 per cent. of twenty-eight cases of acute articular rheumatism.

Pediatria, Naples

Jan. 15, 1922, **30**, No. 2

Moro Tuberculin in Diagnosis. O. Cozzolino.—p. 49.
*The Thymus in Young Children. III. A. F. Canelli.—p. 58.
*Echinococcus Cyst in Both Lungs. G. Genoese.—p. 65.
*Case of Osteopsathyrosis. M. Mallardi.—p. 75.
Lumbar Puncture: Technic and Findings. R. Vaglio.—p. 81. Conc'n.

The Thymus in Young Children.—Canelli discusses the fibrous reticulum in the thymus, and its significance in the physiology and pathology of the organ.

Echinococcus Disease of Both Lungs.—Genoese excised the cyst in one lung of the girl of 7, and is planning a similar operation on the other lung. The biologic tests in this case were all negative but radiography had cleared up the diagnosis. Bilateral echinococcus pulmonary disease is rare. In Thorstensen's 920 cases in Iceland, 4 were in children between 2 and 10, none younger than this.

Osteopsathyrosis.—The first fracture had occurred at the age of 7 months, and several others followed. They occurred without the child's showing signs of pain. The boy is now 3. Inherited syphilis is sometimes a factor in this constitutional anomaly, but there was nothing to indicate this in the present case.

Policlinico, Rome

Jan. 16, 1922, **29**, No. 3

*Colloidal Benzoin Test for the Spinal Fluid. A. Ferraro.—p. 77.
Tracheobronchial Adenopathy Simulating Croup. G. Tron.—p. 80.
*To Render Salt-Free Food More Palatable. B. Masci.—p. 85.
Cholelithiasis in General Practice. P. Gilberti.—p. 86.
Prophylaxis of Typhoid. A. Ferri.—p. 92.

The Colloidal Benzoin Reaction in Spinal Fluid.—Ferraro obtained conflicting responses in 51 cases. It was constantly positive in 10 cases of general paresis and in 5 in which syphilis could be excluded, while it was negative in 3 cases of neurosyphilis and in 27 nonsyphilitics.

To Render the Salt-Poor Diet More Palatable.—Masci commends sodium citrate as a harmless substitute for sodium chlorid when the latter is contraindicated. He says that the small amounts of sodium citrate required, to render the food palatable, do not have any effect on the health in general, or modify elimination through the kidneys. The appetite returns as the lack of salt in the food is masked by this means.

Riforma Medica, Naples

Dec. 10, 1921, **37**, No. 50

*Febrile Infection with Bacillus Asiaticus. I. Jacono.—p. 1165.
The Sachs-Georgi Reaction in Syphilis. L. Scalas.—p. 1166.
*Treatment of Traumatic Epilepsy. C. Gamberini.—p. 1170.
Improved Technic for Staining Fat with Sudan III. Cevario.—p. 1173.
Congenital Blue Disease in Two Brothers. G. Martini.—p. 1174.
Intermittent Hydronephrosis. G. Molinari.—p. 1175.

Fever from Bacillus Asiaticus.—Jacono describes the clinical picture from and the biology of the two forms of *Bacillus asiaticus*.

Treatment of Traumatic Epilepsy.—Gamberini operated in 138 of 652 war wounds of the skull. Epilepsy developed later in 44 among those traced to date; in 10 cases not until after an interval of two or three years. He operated anew for the epilepsy in 33 cases, and 15 were cured and 5 materially improved. No benefit was apparent in the other 13. The best results in all his experience were always realized with an autoplastic operation, turning back over the gap in the skull a bone and periosteum flap from the vicinity, fitting it well into place. The elasticity and yielding nature of the very thin flap insures a safety-valve action.

Brazil-Medico, Rio de Janeiro

Nov. 26, 1921, **2**, No. 20

*Neurofibromatosis with Alcoholism. O. Clark.—p. 297.
Bismuth in Treatment of Syphilis. Carvalho Lima.—p. **300**.
Symmelus Monster-Fetus. P. da Silva.—p. 302.

Cirrhosis of Liver in Alcohol Addiction.—The clinical diagnosis was Recklinghausen's disease in a hard drinker, and the ascites, emaciation and splenomegaly were ascribed to atrophic cirrhosis of the liver, as the severe dropsy exemplified the proverb, "If you live in alcohol, you'll die in water." Necropsy, however, showed the liver and spleen comparatively normal, but the stomach had shrunk to the diameter of the duodenum. Clark remarks that fully 50 per cent. of the cases of cirrhosis of the liver escape detection until death from intercurrent disease, but in this case, although the clinical picture indicated cirrhosis, yet the liver was comparatively sound. His experience has been that violent hematemesis or melena in an adult is almost certain to be traceable to cirrhosis of the liver, especially if the Wassermann test is positive. Alcohol and syphilis are the main factors. The assumption of complicating tuberculous peritonitis as responsible for the ascites with cirrhosis of the liver has been discarded as erroneous, and the preponderant syphilis is now recognized. Treatment for syphilis may induce great improvement. Splenectomy has often rendered good service, but in the case described the inanition from the alcohol addiction had entailed insufficiency of the heart, and this was chiefly responsible for the ascites and edema.

Dec. 3, 1921, **2**, No. 21

*Rhinoscleroma in Brazil. F. Terra.—p. 311.
*Asthma and Anaphylaxis. A. Passos.—p. 320.

Rhinoscleroma in Brazil.—Terra knows of only eight cases of rhinoscleroma in Brazil. He ascribes it to the encapsulated bacillus described by Frisch, and urges tentative treatment with 1 per cent. solution of antimony and potassium tartrate, injected intravenously, in the recent cases. In the older cases radium may prove effectual; he reports two cases completely cured under radium, and cites a few other successful cases of the kind given radium treatment in Italy, Germany or elsewhere.

Asthma.—Passos reviews the recent literature on asthma as a manifestation of anaphylaxis.

Dec. 10, 1921, **2**, No. 22

Old Insidious Appendicitis. J. Monjardino.—p. 334.
New Trematodes. IV. L. Travassos.—p. 337.
*Sir William Osler and His Philosophy. O. Clark.—p. 338.

Sir William Osler.—Clark says that Osler's finding time to write his 730 works on so many different topics in the midst of his multiple and incessant activities is the greatest mystery of his life. He quotes freely from Osler's works as an inspiration to young research workers and other scientists, and pays tribute to him as the great apostle of "doing what lies clearly at hand," and doing it with enthusiasm.

Dec. 17, 1921, **2**, No. 23

*The Bacteriophagum. A. Machado and Costa Cruz.—p. 347.
*Treatment of Strabismus. J. Santa Cecilia.—p. 348.
*Chenopodium and Its Toxicity. Decio Parreiras.—p. 352.

The Bacteriophagum.—The research reported by Machado and Costa Cruz has convinced them that the phenomena ascribed to d'Hérelle's bacteriophagum are the result of ferment action from the products of the bacteria.

Strabismus.—Santa Cecilia describes his application of a modification of the Axenfeld or de Lapersonne's technic. The article is illustrated.

Toxicity of Chenopodium.—Parreiras has been working with the Rockefeller Foundation, and for four years has given chenopodium about 100,000 times a month. In this whole period he was never consulted on account of grave symptoms from the use of the drug except on six occasions, and in these the symptoms subsided so promptly that no measures were applied. The director of the Rockefeller Foundation in

Brazil recently announced that in 644,000 treatments there had been fourteen deaths which the chenopodium is assumed to have caused or hastened. For children under 10 the dose is 2 drops for the year of the age; from 10 to 12, a total of 25 drops; from 12 to 15, 30 drops; from 15 to 20, 40 drops; from 20 to 50, 50 drops, and after the age of 50, 40 drops.

Repertorio de Medicina y Cirugía, Bogotá

October, 1921, **13,** No. 1

Roentgenographic Study of the Kidney. Germán Reyes R.—p. 5.
*Constipation. F. Santander Uscátegui.—p. 21. Conc'n No. 2, p. 71.

November, 1921, **13,** No. 2

Case of Renal Tuberculosis. Germán Reyes R.—p. 62.
Disinfection of Rooms. C. Aguirre Plata.—p. 67.

Causes, Consequences and Treatment of Constipation.—Santander's long study of this subject emphasizes the wide range of factors that can be incriminated in constipation, and the widely different treatment that may be called for in different cases. In some cases in children described, after failure of all other measures, belladonna restored normal functioning to the bowel.

Semana Médica, Buenos Aires

Nov. 17, 1921, **28,** No. 46

Prophylaxis of Diphtheria. J. P. Garrahan.—p. 651.
*Recurrence of Anthrax. F. F. Inda.—p. 657.
Physiopathology of Endometrium in Relation to Menstruation. O. L. Bottaro.—p. 664.
*Protracted Endocarditis. T. Padilla.—p. 674.
Neuroma in Pelvis Obstructing Delivery. R. Mestre.—p. 680.
Roentgen Rays in Treatment of Asthma. C. Heuser.—p. 682.
Organized Prophylaxis of Leprosy. V. Delfino.—p. 684.

Recurrence of Anthrax.—Inda found evidence of recurrence only in two of his 179 anthrax patients in the last two years.

Protracted Endocarditis.—Padilla gives a detailed description of a typical case of endocarditis lenta in a young man, and emphasizes that this disease develops only in an already damaged heart as a rule. There is always a history of acute rheumatism or chorea, or some other infection or syphilis. There may be transient bacteriemia but no septicemia. Anemia, splenomegaly and embolism are special features; the emboli reaching various organs induce special symptoms from the latter. The streptococcus (viridans) involved settles by preference in the left heart.

Archiv für Kinderheilkunde, Stuttgart

Jan. 28, 1922, **70,** No. 4

*Measurement of Intracranial Pressure. E. Wentzler.—p. 241.
*Pneumococcus Empyema in Infants. P. Widowitz.—p. 246.
*Skeletal Changes in Inherited Syphilis. F. Thoenes.—p. 252.
*Respiration in Children. A. Eckstein and E. Rominger.—p. 258.
*Tuberculosis of Skin in Children. W. Lutz.—p. 274.

Gage for Intracranial Pressure in Infants.—Wentzler describes with an illustration the little instrument he has devised to record the excursions of the greater fontanel during respiration. The range is smaller, the tighter the fontanel is stretched; the findings have to be estimated in relation to the diameter of the fontanel. Among its other uses, the gage may call for lumbar puncture at once, or it may show that a proposed lumbar puncture is unnecessary. The instrument has shown that abnormal reduction in the intracranial pressure is more frequent and more pronounced than had been supposed possible hitherto. Its clinical importance is still a question.

Pneumococcus Infections in Young Children.—Widowitz' tabulation of thirty-two cases of pneumococcus empyema, following pneumonia, shows that infants are peculiarly predisposed to metapneumonic affections, while older children are more inclined to streptococcus empyema. Of the pneumococcus cases only 17 per cent. died, while the mortality in the other cases was 71 per cent. The virulence of the pneumococcus seems to decline after pneumonia in infants, so that only conservative measures are indicated in treatment. The prognosis grows more and more favorable the longer the interval after the pneumonia. Pneumococcus processes not preceded by pneumonia must be viewed from another standpoint, and be given surgical treatment accordingly.

Syphilitic Changes in Infants.—In the forty-three infants with inherited syphilis studied by Thoenes, the distal epiphyses of the ulna and radius seemed to be the favorite spot for localization of the syphilitic changes, but they were not symmetrical. Roentgenoscopy is an invaluable aid in detecting inherited syphilis in infants. In his experience it showed the severer bone lesions in the cases free from skin manifestations.

Pathology of the Respiration.—In this fourth installment, the changes in the respiration in tuberculous meningitis in children are discussed, and the nervous origin of the purely functional dissociation.

Tuberculosis of the Skin in Children.—Lutz analyzes the numerous publications on this subject in the last two years.

Archiv für klinische Chirurgie, Berlin

Nov. 24, 1921, **118.** A. Bier Festschrift. Last Third

*Fracture of Clavicle. F. Härtel.—p. 602. Id. Hülsmann.—p. 626.
*Rupture at Base of Terminal Phalanx. Zur Verth.—p. 630.
*Fracture of the Elbow. E. Herzberg.—p. 645.
Origin of Loose Bodies in Joints. H. Ziegner.—p. 662.
Habitual Luxation of Patella. F. Karl.—p. 667.
*Coxa Valga Luxans. B. Cohn.—p. 678.
Posttraumatic Remote Multiple Ankylosis. F. Wille.—p. 696.
*Traumatic Luxation of Hip Joint in Children. O. Doelle.—p. 703.
Spontaneous Rupture of Quadriceps. Wotschack.—p. 726.
*Regeneration of Tendon Sheath. A. Salomon.—p. 733.
Regeneration After Panaritium in Bone. H. Beck.—p. 748.
*Importance of Medium for Life of Tissue. B. O. Pribram and J. Finger.—p. 768.
Postoperative Checking of Secretion of Saliva. Horwitz.—p. 788.
*Treatment of Pernicious Anemia. Walterhöfer and Schramm.—p. 794.
Involvement of Lymph Glands in Dysentery. Dürig.—p. 812.
Two Rare Congenital Anomalies. P. Esau.—p. 817.
Length of Stay of Foreign Bodies in Appendix. Id.—p. 821.
Abscess in Sagging Kidney. Id.—p. 823.
Removal of Foreign Body in Bronchus. W. Keppler.—p. 825.
*Tumors Retrogress After Exploratory Operation. W. Müller.—p. 830.
*Suprarenalectomy in Epilepsy. V. Schmieden and H. Peiper.—p. 845.
Dorsal Luxation of Big Toe. E. O. P. Schultze.—p. 865.
*Posttraumatic Disease of Vertebrae. H. Kümmell.—p. 876.
*Boxing Fatalities. W. Kohlrausch.—p. 902.

Fracture of the Clavicle.—In Härtel's six cases, various measures were applied to correct the dislocation from the drag of the shoulder, as he describes. The arms must be bent backward, he says, the forearms horizontal, as when a cane is passed through the arms behind the back. Hülsmann's method lifts up the shoulder with a crutch pad fastened to a splint worn on the arm, but leaving the joints free.

Fracture of Terminal Phalanx of Fingers.—Zur Verth analyzes 250 cases of fracture of a finger bone and the treatment.

Fracture of Elbow.—Herzberg describes the various forms of treatment adapted for the different kinds of fractures in the elbow region, as applied in Bier's service.

Coxa Valga Luxans.—Cohn insists on the necessity for differentiating this congenital anomaly as there does not seem to be any means for correcting it. The valgus position of the neck, and the defective development and deformity of the acetabulum render all measures futile and hopeless.

Traumatic Luxation of Hip Joint in Children.—Doelle adds 2 more cases to 36 compiled from the literature, and summarizes them all, comparing the treatment with the outcome.

Regeneration of Tendon Sheath After Partial Laceration.—In Salomon's two cases the Achilles tendon was the one involved. The partial spontaneous reconstruction of the tendon sheath observed in these cases is an object lesson for repair of tendon sheaths.

The Medium and Metaplasia.—Experimental research is described in which scraps of skin were implanted in the peritoneum, and scraps of peritoneum implanted in the skin, etc. The importance of the medium for the maintenance of tissue characteristics is emphasized by the findings. In one instance a scrap of epidermis transplanted in the peritoneum developed into a tissue like a horny cancer. The facts observed confirm the advantages of refraining from draining in operations on cavities lined with connective tissue. The peritoneum, for instance, conquers infection by a process which in other tissues represents a phlegmonous inflamma-

tion, that is, a destruction of its own tissue. But the cavity has to be a closed one for this to proceed naturally.

Operative Treatment of Pernicious Anemia.—Walterhöfer and Schramm state that in sixteen patients with pernicious anemia, treated by splenectomy, only one survived for five years and only two survived for over two and over four years. The others died in from two months to two years. They have been attacking the disease from another standpoint, removing part of the bone marrow from a long bone, seeking thus to stimulate regeneration of the bone marrow. Nine cases are described in detail, all in an advanced stage, mostly after several remissions of the disease. A favorable effect, subjective and objective, was evident, the number of erythrocytes rapidly increasing. In one case a complete remission followed the operation. Four of the patients have died since, one from pneumonia and one from complicating colitis. They commend this "demarrowing" (*entmarkung*), for cases rebellious to other measures, especially during a remission, and after the patient has been benefited by transfusion of blood or other measures.

Retrogression of Tumors After Exploratory Operation.—Müller appeals for publication of all cases of this kind, and reports three from his own experience. One was in a youth of 17; the large sarcoma in the bones of the right pelvis was absolutely inoperable, but he scooped out masses from it, to a total of about the bulk of an orange. It bled freely, and the patient soon began to improve. Nine years later the young man seems to be practically cured, leading an active life. He queries whether the tumor was malignant or a benign osteoma to start with. In the second case a rapidly growing myxosarcoma in the thigh of an 18 months' infant retrogressed after an exploratory operation, and the child at 14 is in perfect health. In the third case, an enchondroma in the right pelvis of a man of 43 likewise retrogressed after an exploratory operation. In these last two cases there had been suppuration afterward, but not in the first case.

Partial Suprarenalectomy in Epilepsy.—No permanent benefit was obtained in seven cases of epilepsy treated by removal of one suprarenal. The patients were from 6 to 23 years old. In one of the women menstruation became irregular and scanty afterward, while in another woman menstruation reappeared, with normal regularity, after suspension for eight years. In both these cases the seizures appeared in connection with the menses. This was evident likewise in another case he cites, in which a favorable influence from the suprarenalectomy was manifest.

Posttraumatic Spondylitis.—Kümmel here brings down to date the disease of the vertebrae called by his name. The trauma is usually slight, and some time elapses before symptoms develop. The main feature is the softening of the intervertebral disk, but this is hard to detect in the roentgenogram at first. An early diagnosis is important to ward off deformity. The Albee operation has rendered good service.

Boxing Fatalities.—Kohlrausch reports a case of cerebral hemorrhage occurring during a boxing bout, and cites a second case at Berlin and 4 from America. In 2 of the total 6 cases the fall on the floor was evidently responsible; in the others a blow.

Archiv für Verdauungs-Krankheiten, etc., Berlin

December, 1921, **29**, No. 1-2

*Fasting in Treatment of Diabetes. H. Gorke.—p. 1.
*Psychic Influence on Gastric Secretion. G. R. Heyer.—p. 11.
*Enteroptosis. F. W. Strauch.—p. 28.
*Injury of Stomach Mucosa from Contusions. R. Böttcher.—p. 40.
*Limits of Resection of Small Intestine. F. Schilling.—p. 52.
*Spirochete Enteritis. A. Luger.—p. 59.
*Etiology of Jaundice. W. Löwenberg.—p. 94.

Fasting in Treatment of Diabetes.—Gorke says that the experience of German clinicians with Allen's fasting treatment of diabetes has not been very favorable. But in Minkowski's service, seventeen of nineteen diabetics from 12 to 62 years of age had the urine completely freed of sugar under it, and in most of them acidosis was prevented. In the two gravest cases the glycosuria and acetone output were reduced to minimal proportions. In one of these very grave cases, after months of this comparatively good condition, the patient left the clinic for home, and he began to eat fat and protein in large amounts, contrary to directions. This excessive metabolism entailed acidosis and coma, with death the eighth day after leaving the clinic. Gorke is convinced that diabetics weighing about 60 kg. do better when restricted to 1,500 or 2,000 calories, containing only 50 or 75 gm. protein. He aims to have them weigh the same when they leave as when they entered the clinic, and to keep up the restrictions at home. Over 2,500 calories he regards as bound to reduce the tolerance, and thus to hasten the progress of the derangement of the metabolism.

Mental Influence on Gastric Secretion.—Heyer's research during hypnosis, a fine stomach tube in place, with continuous aspiration, demonstrated a remarkable variability in the acid content of the gastric juice in the same person at different times after both test meals and suggestion. The suggestion of pain, danger, recalling of war happenings, arrested at once the gastric secretion in nearly all the subjects. The suggestion of agreeable events, a spring day, winning money in a lottery, etc., never had the opposite effect, but had the same arresting influence only it occurred more slowly. His research thus has demonstrated the law that any diversion of the mind, painful or pleasurable, from the act of eating, checks the secretion of gastric juice. The effect is more pronounced, the stronger the mental impression. In one patient with pure mania the gastric secretion was found constantly normal. In all the subjects, the stomach secretion increased at once in large amounts when a nutrient enema was injected. The distention of the rectum evidently promoted secretion in the stomach by reflex action, as all psychic factors were excluded, and the reaction occurred too promptly for the nourishment to have made its influence felt. The findings in this line suggest the necessity for giving nutrient enemas a drop at a time, with gastric ulcer, to avert this reflex action from distention of the rectum. His tables show, for instance, a drop from 10 or 20 or 18 to 0.5, 2 and 1 in the amount of gastric juice secreted under the suggestion of bombing, a railroad accident or the like. The drop was from 10 to 3 under suggestion of good news. Atropin given before or with the sham feeding checked secretion, but it did not seem to influence it when not administered until the secretion was well under way. Heyer's first report on his research in this line was described in THE JOURNAL, June 11, 1921, p. 1714.

Ptosis of the Intestines.—Strauch reports three cases which prove that a sagging bowel in a child may induce symptoms suggesting appendicitis. In all, regulation of the diet, tonics, massage, baths and systematic exercise of the abdominal wall (reclining), flexing the thighs (also reclining), cured the tendency completely with no recurrence during the year since. The differential diagnosis is particularly important as, with actual appendicitis, gymnastic exercises are contraindicated, while this is the one thing needed with coloptosis to supplement the coarse food and avoidance of foods inducing fermentation. In two other children the sagging of the right flexure had induced symptoms suggesting gallbladder disease. He warns that children with vague pains in the back and cecum region, and fever, may have some mesenteric or bowel tuberculous process. He describes further some cases in adults to illustrate the grave clinical picture that may be induced by coloptosis alone. In one girl of 20 the disturbances from the sagging transverse colon were multiplied by obstipation of neurotic origin, and great improvement was realized by abdominal exercises, electricity, a supporting band and atropin. Ovarian and thyroid incompetency had evidently cooperated in the clinical picture. In the middle aged, coloptosis often causes symptoms which suggest cancer. In children, a primary enteroptosis may exist without signs of a substandard constitution otherwise. At puberty, symptoms from endocrine insufficiency may dominate the clinical picture from the ptosis. At all ages, hypotonia of the tissues is the one main factor in enteroptosis, and treatment must aim to restore strength and elasticity to the muscular system. Gymnastic exercises and massage of the abdominal walls and diaphragm and of the floor of the pelvis will aid in overcoming the flabbiness, supplemented by a supporting band, rest and extra nourishing food, with general baths or

drugs as individually indicated. Only after failure of systematic measures in this line should operative measures be considered.

Traumatic Origin of Gastric Ulcer.—A woman committed suicide by jumping from a window, and among the injuries of tissue found at necropsy, Böttcher noted two lacerations of the mucosa in the lesser curvature of the stomach, exactly at the points where typical gastric ulcers usually develop. This finding is similar to those in the stomachs of animals after contusion of the abdomen. A few clinical cases are also on record. The stomach is forced back against the spine by the contusion, and the mucosa is injured thereby.

How Long a Segment of Small Intestine Can We Resect?—Schilling's study of the literature fails to set any limit. Each case has to be decided by the individual conditions.

Spirochete Enteritis.—Four cases of acute benign hemorrhagic enteritis were explained by discovery of spirochetes and fusiform bacilli in the stools. Other pathogenic bacteria and protozoa were never found or in such small numbers as to be negligible. The disappearance of the spirochetes on recovery confirmed the causal connection.

Catarrhal Jaundice.—Löwenberg comments on the increasing prevalence of catarrhal jaundice (Berlin), and of the catarrhal conditions in the stomach which accompany it. The catarrhal process probably involves the duodenum and stomach as well as the bile ducts. His agglutination tests failed to connect the colon-typhoid group with the jaundice.

Deutsche medizinische Wochenschrift, Berlin

Dec. 29, 1921, **47**, No. 52

The d'Hérelle Phenomenon.—Otto and Munter discuss the significance of and the four ways of demonstrating the d'Hérelle phenomenon. This consists in the fact that stool filtrates of dysentery patients (or convalescents) destroy in vitro dysentery bacilli. First, the stool filtrate may be put into a nutritive medium, to which dysentery bacilli are then added; in contradistinction to the controls, no bacterial growth takes place, at least not at first, although long incubation may produce some growth of highly resistant microorganisms. Or again, the filtrate is added to a bacterial emulsion in a meat broth; it may then be noted that the broth which was previously cloudy, owing to the bacteria present, now becomes clear in a few hours. Thirdly, a minute quantity of the filtrate may be dropped on an agar plate with a bacterial smear (before it is incubated); when the smear is then incubated there will be no growth where the filtrate touched it. Finally, the presence of the active principle may be demonstrated by an animal experiment; for example, if we inject intraperitoneally in a guinea-pig a small quantity of the active filtrate, along with a certain quantity of the bacterial culture, it will be noted that the bacilli within the abdomen of the animal do not increase; this guinea-pig lives, while the control animal, receiving no filtrate, dies.

Klinische Wochenschrift, Berlin

Jan. 1, 1922, **1**, No. 1

Enlargement of the Heart.—Meyer emphasizes the need of distinguishing various types of cardiac enlargement as treatment differs with each. An enlargement may be occasioned by an increase in the total quantity of circulating blood whereby the heart wall is subjected to higher tension, as the result of which gradual hypertrophy may take place if the increased tension is long continued. On the other hand, an enlargement may be due to the abnormal distribution of the blood, though the quantity has remained the same, a condition that arises through a hypofunctioning of certain portions of the cardiovascular system. This constitutes the most frequent type of cardiac decompensation. Purely muscular enlargement without extension of the heart cavity, a condition which the pathologic anatomists designate as simple hypertrophy, or, if the size of the heart cavity is diminished, as concentric hypertrophy, is difficult to demonstrate, unless a heaving apex impulse points to hypertrophy of the left ventricle, or marked epigastric pulsation indicates accelerated action of the right ventricle. Meyer announces that his research has demonstrated that conditions in rabbits conform very closely to those in man so far as the phenomena of adaptation in the circulation are concerned. These phenomena can thus be instructively studied in rabbits.

Gastric Ulcer Surgery.—Schmieden emphasizes that in the case of carcinoma of the stomach we must consider how much of the stomach wall can be safely cut away, but that in gastric ulcer, on the other hand, we must preserve as much of the stomach wall as possible.

Medizinische Klinik, Berlin

Dec. 18, 1921, **17**, No. 51

Isolated Pupil Disturbances in Syphilis.—Dreyfus has had under supervision for several years 60 per cent. of 107 persons with isolated pupil disturbances for which syphilis could be considered responsible, after exclusion of diabetes, epidemic encephalitis and other endogenous intoxications and chronic alcoholism, etc. His tabulated details sustain his assertion that positive findings in the cerebrospinal fluid are a sign of active cerebral syphilis, calling for vigorous treatment. Such cases may develop neurosyphilis, tabes or paresis, usually the latter. A Damocles' sword is hanging over their heads. With primary negative findings in the cerebrospinal fluid, the cerebral syphilis may be assumed in all probability to be arrested. If the serum is negative likewise, no further treatment is required. The necropsies in these cases with negative spinal fluid findings always showed signs of old processes, but the microscope disclosed no evidence of an active process. A secondary negative cerebrospinal fluid may become positive again, sooner or later, and the prognosis is thus different. In 14 cases under observation for six to nine years, only 2 were stationary; in the 12 others the syphilis had run a progressive course.

Functional Tests of the Stomach.—Friedrich commends the alcohol test breakfast as extremely convenient and instructive in general practice. The subject drinks 300 c.c., fasting, of a 5 per cent. solution of alcohol, and the stomach contents are siphoned out half an hour later. By giving carmin the evening before, the motor functioning can be estimated at

the same time. The alcohol test breakfast is as informative on all points as the other test meals, as he shows, with the exception of chymification and stratification.

Treatment of Septic Abortion.—This is the concluding instalment of the replies to a questionnaire on this subject sent to a large number of prominent physicians. In Koblanck's response he remarked that in the last week at the Berlin Virchow Hospital four women had to be given operative treatment on account of perforation of the uterus during curetting by a physician. Every septic peritonitis calls for operative measures, the earlier the better. But if it has lasted for over three days and if the bacteria in the blood are virulent, the operation has no chance of success. Henkel emphasized that the management of abortion in general practice should be conservative. The physician should limit his efforts to sustaining the natural forces to the utmost. Hemorrhage does not call for active measures. Tamponing the vagina and giving something to promote the labor contractions generally not only arrests the hemorrhage but insures the spontaneous expulsion of the contents of the uterus. Only where the bleeding is very extensive and the cervix dilated, should intra-uterine measures be considered, and then only the fingers, no instruments, used to evacuate the uterus. Particularly direful have been the results in the cases in which the cervix was not permeable. The woman recovers most rapidly when the spontaneous conclusion of the abortion has been realized.

Psychanalysis and Sexual Science.—This collective review of recent literature embraces, further, psychopathology and medical psychology. Stekel remarks in conclusion that no sensible person now doubts the existence of telepathy although we cannot explain it. Wireless telegraphy is a fact that has to be counted with, and although no one can explain it, yet it is being constantly studied and its scope enlarged.

Münchener medizinische Wochenschrift, Munich

Dec. 16, 1921, **68,** No. 50

Parathyroid Implants in Postoperative Tetany. Borchers.—p. 1609.
Silicic Acid in Arteriosclerosis, and Related Conditions. Kühn.—p. 1612.
*Prophylactic Irradiation of Spleen and Liver. F. Partsch.—p. 1613.
Sedative Treatment in Typhus Fever. T. Hausmann.—p. 1615.
Behavior of Blood in Mountain Regions. Frenkel-Tissot.—p. 1616.
Roentgenology in Tuberculosis of Lungs. Kaestle.—p. 1617.
Roentgenograms with Soft Rays. F. Zacher,—p. 1619.
A Tight-Fitting Head Bandage. O. Goetze.—p. 1621.
Meostagmin Reaction Differentiates Cancer. Schemensky.—p.1622.
Painless Delivery Under Suggestion. O. Flöel.—p. 1623.
The Symptomatology of Mitral Insufficiency. Herzog.—p. 1623.
Injury to Bladder by Pitchfork Handle. W. Schröder.—p. 1624.
Foreign Bodies in Bladder. H. Ulrich.—p. 1624.
Combination of Varioloid and Latent Syphilis. Hillenberg.—p. 1624.
Operative Treatment of Scoliosis. J. von Finck.—p. 1625.
Value of an Aorta Clamp in Obstetric Practice. Hoffmann.—p. 1625.
Treatment of Pyelitis. W. Nonnenbruch.—p. 1626.

Dec. 23, 1921, **68,** No. 51

Lymphocytosis. J. Weicksel.—p. 1643.
Clasping Reflex and Brudzinski Sign in Infants. Freudenberg.—p. 1646.
Thoracoscopy. R. Korbsch.—p. 1647.
Thermal Stimulation of the Internal Ear. B. Griessmann.—p. 1648.
The d'Hérelle Phenomenon. W. Rimpau.—p. 1649.
Clinical Picture of Esophageal Atresia. F. Göppert.—p. 1649.
Late Tetanus. F. Rehm.—p. 1649.
Traumatic Rupture of Common Bile Duct. H. Rudberg.—p. 1650.
Remarks on Problem of Tuberculosis. F. Toeplitz.—p. 1651.
Care of the Teeth. M. Kühn.—p. 1652.
Anthropometry in Relation to Medicine. W. Scheidt.—p. 1653.
Painless Birth. K. von Oettingen.—p. 1654.
Tetanus After Burn from High Power Current. W. Förster.—p. 1655.
Treatment of Recent Syphilis. L. von Zumbusch.—p. 1656.
Physiology and Reforms in Medical Education. K. Bürker.—p. 1658.

Preoperative Roentgen Irradiation of the Spleen and Liver.—Partsch states that the prophylactic irradiation of the spleen brought about a decrease in the coagulation time of the blood at operation in only a small fraction of the cases. There was no clear evidence that preoperative irradiation exerted any influence on the course of healing by preventing postoperative hemorrhages and hematomas. The results of irradiation of the liver are as uncertain as those of irradiation of the spleen. Irradiation is, therefore, superfluous as a prophylactic from the standpoint of practical surgery, and is to be recommended only for patients with markedly retarded coagulation time (hemophilia, icterus).

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Nov. 26, 1921, **2,** No. 22

*Psychanalysis. A. F. Meijer.—p. 2662.
*Electric Accidents. C. W. G. Mieremet.—p. 2678.
*Roentgen Treatment of Trichophytosis. E. Wiener.—p. 2684.
*Double Murder and Suicide. J. P. L. Hulst.—p. 2688.
*Pneumococcus Meningitis. D. van der Kooi.—p. 2695.
Thumb Reconstructed from Big Toe. J. van Assen.—p. 2747.

Psychanalysis.—Meijer complains that Freud's methods are criticized by persons who have not taken the trouble to really comprehend the principles, as he shows by some quotations from recent textbooks. He emphasizes further that none of the data accumulated by the World War seem to conflict with Freud's views.

Experimental Research on Live Wire Electric Accidents.—Mieremet was impressed with the similarity between the local microscopic findings in burns from a strong electric current and burns from the action of fire. But the macroscopic picture may differ decidedly; only with the electric injury—and not always then—do we find the hard white patches resembling cartilage or stearin. These patches induced in rabbits were cast off after a few days, seventeen at most. This occurs also after clinical electric accidents, these injuries behaving differently in this respect from ordinary burns and other wounds.

Radiotherapy of Trichophytosis.—Wiener has never had any secondary lesions develop in his hundred cases of application of the roentgen rays to cure sycosis of the beard. He says that it can be counted on to cure many rebellious cases.

Suicide in General Paresis.—A case of murder plus suicide is described in which necropsy revealed unsuspected paretic dementia, explaining the apparently motiveless tragedy.

Pneumococcus Meningitis with Apoplectic Onset.—The supposedly healthy young woman was stricken down suddenly as with an apoplectic stroke. Symptoms of meningitis followed. Lumbar puncture gave some relief but the course was long, and there were some stiffness and pain in the spine five months later.

Acta Chirurgica Scandinavica, Stockholm

Jan. 17, 1922, **54,** No. 4

*Emboli and Embolic Gangrene. P. Bull.—p. 315.
*Embolectomy for Embolic Disturbances. E. Key.—p. 339.
*Arthroplastic Operation on Elbow. N. Silfverkiöld.—p. 417.

Emboli and Embolic Gangrene.—Bull's heading to his long article—which is in English—is "What can more than 6,000 postmortem examinations teach us about emboli and embolic gangrene of the extremities?" In recent years he has encountered 6 cases of gangrene from embolism in the main arteries of the leg, bilateral in 2. In a total of 6,140 necropsies he found evidence of embolism in arm or leg in 15, but in 4 per cent. of the total cadavers he found thrombosis in the aorta in 9 cases and in the heart in 234. Thrombi were found in the right heart in 67; left heart in 63, and in both the right and left sides of the heart in 57. In 19 cases the thrombosis in the heart was not associated with valvular disease, hypertrophy, fibrous myocarditis or acute endocarditis. Of the 181 cases of thrombosis in the heart, 5 were in children, as also one of the 73 with valvular thrombosis. These 6 children ranged from 7 months to 13 years in age. Embolic gangrene thus is not always senile gangrene, even when it appears in the elderly. Bull concludes his analysis by emphasizing that embolism in a limb is usually merely one link in a chain of emboli in other organs, prior to, simultaneous with or subsequent to the embolism in the extremity. In his 15 cases of the latter, embolism was manifest in the lungs (9), in kidneys (9), in spleen (7), in brain (4) and in the intestines (1) in all but one of the cadavers in this group. Among the 237 with thrombosis in the heart, embolism was found in all but 48. In 113 it was in the lungs; in 74 in the kidneys; in 60 in the spleen; in 32 in the brain; in 6 in the intestines, and also the 15 with embolism in the limbs, and the one case of embolism in the liver.

Embolectomy in Treatment of Embolism of the Extremities.—Key remarks that embolectomy is one of the most grateful fields for surgery when the diagnosis is made in time. He

reviews the history of embolectomy and the clinical picture of obstructing embolism. The sudden onset of pain, numbness and disturbance in the circulation, coexistence of some heart defect, or preceding infection, or operation which might predispose to thrombosis in the heart, and a history of a tendency to embolism—these points aid in the differential diagnosis. When the symptoms develop only gradually, differentiation is difficult. With arteritic thrombosis, the patient has generally presented prodromal symptoms for a long time, even for years, such as chilliness and numbness, rheumatic or neuralgic pains in the limb and cyanosis in the peripheral portions. In the 45 cases of embolectomy he has compiled, the operation was a success in 9 of the 12 cases with an interval of less than ten hours; in only 2 of the 5 with an interval of eleven to fifteen, and in only one of 3 and 4 cases with intervals of from sixteen to twenty or twenty to twenty-four hours. As thrombosis develops below the obstruction so rapidly, the outcome depends usually on the promptness with which the embolus is removed, under local anesthesia. Secondary thrombi should be removed at the same time. After removing the embolus, the clamp on the artery above should be loosened to allow the blood to sweep out any emboli from above. After suturing the vessel, if the circulation is not restored through the limb, search must be made for an embolus at some other point. As an aid in warding off further thrombosis, the sponges and the instruments and hands should be dipped in a 2 per cent. solution of sodium citrate. If the general condition or the heart action does not allow embolectomy, the embolus might be rubbed to pieces by massage in the cases seen early and adapted to this. He gives full details of his own 8 cases of embolectomy and of 11 others done by other Norwegian or Swedish surgeons. The outcome was successful in 10. In the total 45 cases, the operation followed within twenty-four hours in 43, and the outcome was favorable in 13.

Arthroplastics of Elbow.—Ankylosis after a streptococcus process in the right elbow incapacitated the woman of 23, a domestic servant, but almost complete functional use of the arm was restored by sawing and cutting a new joint surface on the humerus and carving the ulna and radius to correspond, and interposing a strip of fascia lata. The soft parts were sutured with silk to hold the new joint firm, the ends in close contact with each other. Active movements were begun in two days and the patient was kept under supervision as an outpatient after the second month for another month. Reexamination eight months later shows full active capacity for flexion, extension, etc., lifting a pail of water, hanging by both arms without support for the feet, etc. Only the last phase of extension is not quite normally strong. The report of the case is in English and is illustrated.

Finska Läkaresällskapets Handlingar, Helsingfors

November-December, 1921, **63**, No. 11-12

Fluctuations in Prevalence of Chlorosis.—Schauman quotes authorities in Sweden, Norway, England, Vienna and the United States who have commented on the rarity of chlorosis during the last twenty years. This experience confirms what has been observed in Finland. The high peak in the prevalence of chlorosis seemed to be between 1879 and 1903 in Sweden, and he compares this with the high peak of alcohol consumption in that country. Another possible factor that has been suggested is that electromagnetic currents may modify the endocrine glands in some way. The virulence of certain bacteria has been shown to be modified in the magnetic field. The misery from the World War was instrumental in increasing the prevalence of tuberculosis and rachitis, but not of chlorosis. Statistics in Sweden testify that chlorosis was very rare in that country before 1830. The high peak that followed then and again in 1891 confirms the wave-like endemic appearance of the disease.

Means to Promote Coagulation of the Blood.—After ascertaining that the coagulation varied very little on repeated examination of 10 healthy persons, Elving investigated the action of roentgen exposures of the spleen, liver and heart, and of intravenous injection of various substances. His final verdict is in favor of calcium chlorid as the best hemostyptic, both experimental and clinical experience confirming the prompt action of 20 c.c. of a 15 per cent. solution injected by the vein. In one case, 10 c.c. of a 10 per cent. solution shortened the coagulation time by 91 per cent. Roentgen exposures of the spleen also had a moderate accelerating influence in all but one of 12 cases. This effect reached its height by the fifth hour and persisted through the eighth hour. The dose was one third of the skin erythema dose, the tube 24 cm. from the field. Ice bags and ethyl chlorid spray displayed no efficacy.

Cataract Extraction.—Grönholm describes a subconjunctival cataract operation which he has applied in forty cases with eminent success in all but one case in which there was prolapse of the iris. The others healed promptly and without grave infection under the doubly pedunculated conjunctival flap. A long summary in German accompanies the article.

Hospitalstidende, Copenhagen

Dec. 28, 1921, **64**, No. 52

Perforation of Gallbladder with Profuse Hemorrhage.—The woman of 72 had never noted any symptoms from the biliary apparatus until recently, when severe pain in the right side with other signs of peritonitis were explained by discovery of a gallstone, 15 cm. long and 3 or 4 cm. wide, loose among the intestines, with about a liter of blood, and a large tear in the gallbladder. Smooth recovery followed cholecystectomy. Gjellerup has found only two such cases on record, fatal in one.

Hygiea, Stockholm

Dec. 16, 1921, **83**, No. 23

Unspecific Immunity.—Much defines all sickness as a disturbance in balance, saying that all treatment is an effort to restore the biologic balance. All treatment thus has a biologic aim, and hence may be called immune therapy. The measures employed may be a biologic isotherapy, the virus itself stimulating immunity, or it may be biologic homoopathy, or biologic allopathy, as he explains. All these lines are logical, and with them we can induce a specific and also an unspecific immunity. Immunity is not restricted to the specific immune phenomena; everything strengthening or weakening cell function is an immunity process. With this conception, he says, fall the sham walls which have been hemming in our efforts.

Ugeskrift for Læger, Copenhagen

Jan. 19, 1922, **84**, No. 3

Jan. 26, 1922, **84**, No. 4

Roentgen-Ray Treatment of Brain Tumors.—Nordentoft reviews the present condition of 18 patients with brain tumors treated by roentgenotherapy before 1919. He also adds 4 new cases to the list. No benefit was apparent in 7 in his first series, or it was transient, and in 2 others the disease proved to be disseminated sclerosis. The other 9 patients were apparently cured by the irradiations, with earning capacity restored. A few still have some visual disturbance and one had much later an intercurrent cerebral hemorrhage which has partially incapacitated him. But the cases reported as cured in 1919 have persisted cured during the four, five and six years since their treatment. Brain tumors seem to be especially susceptible to the roentgen rays, and when the tumor subsides under them, it displays no tendency to return. He summarizes the details of his cases; the location was apparently the cerebellopontile region, the parietal or frontal lobe or the cerebellum or hippocampal gyrus; the ages ranged from 17 to 51.